IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

MICROSOFT CORPORATION, Plaintiff, v. ALCATEL-LUCENT ENTERPRISE and GENESYS TELECOMMUNICATIONS LABORATORIES, INC., Defendants.	)	C.A. No. 07-090 (SLR) **REDACTED – PUBLIC VERSION**

DEFENDANTS ALCATEL LUCENT ENTERPRISE AND GENESYS TELECOMMUNICATIONS LABORATORIES' OPENING BRIEF IN SUPPORT OF DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT AND INVALIDITY OF ALL ASSERTED CLAIMS OF UNITED STATES PATENT NOS. 6,430,289

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NATURE AND STAGE OF THE PROCEEDINGS

On February 16, 2007, Microsoft Corporation ("Microsoft") filed a complaint with the United States International Trade Commission ("the related ITC matter"). On the same day, Microsoft filed this action in the District of Delaware for patent infringement, claiming that two different combinations of individual products manufactured and sold by Alcatel Lucent Enterprise ("ALE"), the OXE System and the OXO System, infringe four Microsoft patents. One of those patents, U.S. Patent No. 6,430,289 ("'289 Patent") (Ex. 1), is the patent at issue in this motion.

On May 30, 2007, Microsoft amended its complaint to add Genesys as a defendant. In its amended complaint, Microsoft alleges infringement by Genesys of both the '289 Patent as well as the related U.S. Patent No. 6,421,439 ("the '439 Patent"). Microsoft, however, abandoned its allegations against Genesys with respect to the '439 patent and is only proceeding with respect to the '289 Patent against Genesys.[1]

Microsoft asserts that the ALE OXE System infringes claims 1, 7, 8 and 10 of the '289 Patent; the ALE OXO System infringes claims 1, 7 and 8 of the '289 Patent; and the Genesys Product infringes claims 1, 3, 7, 8 and 10 of the '289 Patent. The undisputed facts demonstrate that the accused products do not infringe the asserted claims and further demonstrate that the '289 Patent claims are invalid as a matter of law because they are anticipated by the prior art. The relevant claim construction issues are addressed in Defendants' Opening Claim Construction Brief ("Defendants' Markman Brief") filed concurrently herewith.

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[1] Microsoft did not provide an expert report regarding infringement by Genesys of the '439 patent.

SUMMARY OF ARGUMENT

A. The Accused ALE OXE and OXO Products Do Not Infringe the Asserted Claims of the '289 Patent

According to the '289 Patent, prior art telephone systems were incapable of determining when a particular callee was actually available to take a call. The '289 Patent purports to solve this problem with a system that uses predetermined rules and monitored activity of the callee's computer to determine when the callee is actually available to take a call.

The key issue regarding non-infringement of the '289 Patent involves the limitation of the '289 Patent that requires "monitoring activity of a user computer." This element is central to the problem claimed to be solved by the '289 Patent, because it is the way the claimed system determines that the called party is physically present near the telephone extension associated with the monitored computer. The presumption is that if the user's computer is active, the user is likely physically near the phone and thus more likely to be available for a call.

Microsoft ignores this central element of claimed system when it asserts the "monitoring activity of a user computer" requirement is met by the ability of the accused products to route calls to voice mail when a user is engaged on a soft phone call.[2] [redacted] Moreover, the "activity" upon which Microsoft relies in its infringement scenario (user engaged in a soft phone call) would ***never*** be an indicator that the user is available to take a call. Indeed, being engaged in a telephone call would always indicate that a user is ***not*** available for a call. This fundamental distortion of the basic purpose of the invention illustrates the flaws in Microsoft's infringement claims.

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[2] A soft phone is a telephone which uses computer apparatus as the speaker and dialer instead of a regular telephone.

The non-infringement portion of this motion addresses two primary reasons why the Accused ALE products do not infringe the asserted claims of the '289 patent.

[redacted]

Second, the asserted claims require "at the computer network, receiving information from the telephone network that a first party from whom a call is originating desires to establish telephone communication with a second party." [redacted]

[redacted]

B. The Accused Genesys Product Does Not Infringe the Asserted Claims of the '289 Patent

[redacted]

C. The '289 Patent is Invalid Under Microsoft's Construction

The '289 Patent is anticipated by the Chestnut patent under Microsoft's proposed claim constructions. Microsoft challenges three elements of the asserted claims under its constructions, but as discussed in detail in the Argument section below, all three limitations are disclosed.

STATEMENT OF FACTS

The material facts are discussed below in the Argument section.

ARGUMENT

A. Legal Standards

The applicable legal standards are set forth, and incorporated herein by reference, in ALE's brief in support of its motion for summary judgment for asserted claims of the '439 Patent ("ALE's '439 Brief") filed concurrently herewith. (*See* ALE's '439 Brief at IV.A.3.)

B. The Accused ALE Products Do Not Infringe the Asserted Claims of the '289 Patent

1. The Accused ALE Systems

The accused Alcatel OXE and OXO systems are both combinations of products. [redacted]

[redacted]

2. The '289 Patent

The '289 Patent is entitled "System and Method for Computerized Status Monitor and Use in a Telephone Network." (Ex. 1 ('289 Patent) at cover.) The '289 Patent issued on August 6, 2002 to named inventor Stephen Mitchell Liffick. (*Id.*) Microsoft is the assignee of the '289 Patent. (*Id.*)

a. The Inventor Believed that the Prior Art Approach of Calling Without an Indication that a Party Was Available and Leaving Messages Wasted Resources

According to the '289 Patent's Background of the Invention section, then-existing telephone systems were capable of routing incoming calls to voice mail when a destination telephone was busy or went unanswered. (*Id.* at 1:26-30.) Though an improvement over prior art systems, these systems were problematic because they were incapable of determining when a particular callee was actually available to take a call. (*Id.* at 1:31-33.) Without the ability to determine callee availability, callers had no choice but to place a call and hope the callee answered or leave a message in an attempt to set up a time for a call. (*Id.* at 1:33-38.) Failed attempts to contact a party, and/or numerous calls back and forth with the parties leaving messages in an effort to set up a call was a waste of resources. (*Id.* at 1:38-43.)

b. The Inventor Sought to Provide a Way to Set Up Calls Between Parties Only When They Are Both Available to Take a Call

The '289 Patent purports to solve this problem with a system that uses predetermined rules and monitored activity of the callee's computer to determine when the callee is actually available to take a call. (*Id.* at 2:7-26, 14:50-15:7, 15:35-46.) In the system described in the '289 Patent, the monitored computer activity and predetermined rules of both the caller and callee are used to set up a call between the parties (ring tones are generated to each party) when they are both available to take a call. (*Id.* at 15:14-24, Fig. 9.) The activity of the called party's computer is monitored in order to determine that the called party is physically near the phone associated with that computer and therefore more likely available to take a call. Specifically, the

specification equates "activity of a user computer" with whether the computer is "active or idle."[3]

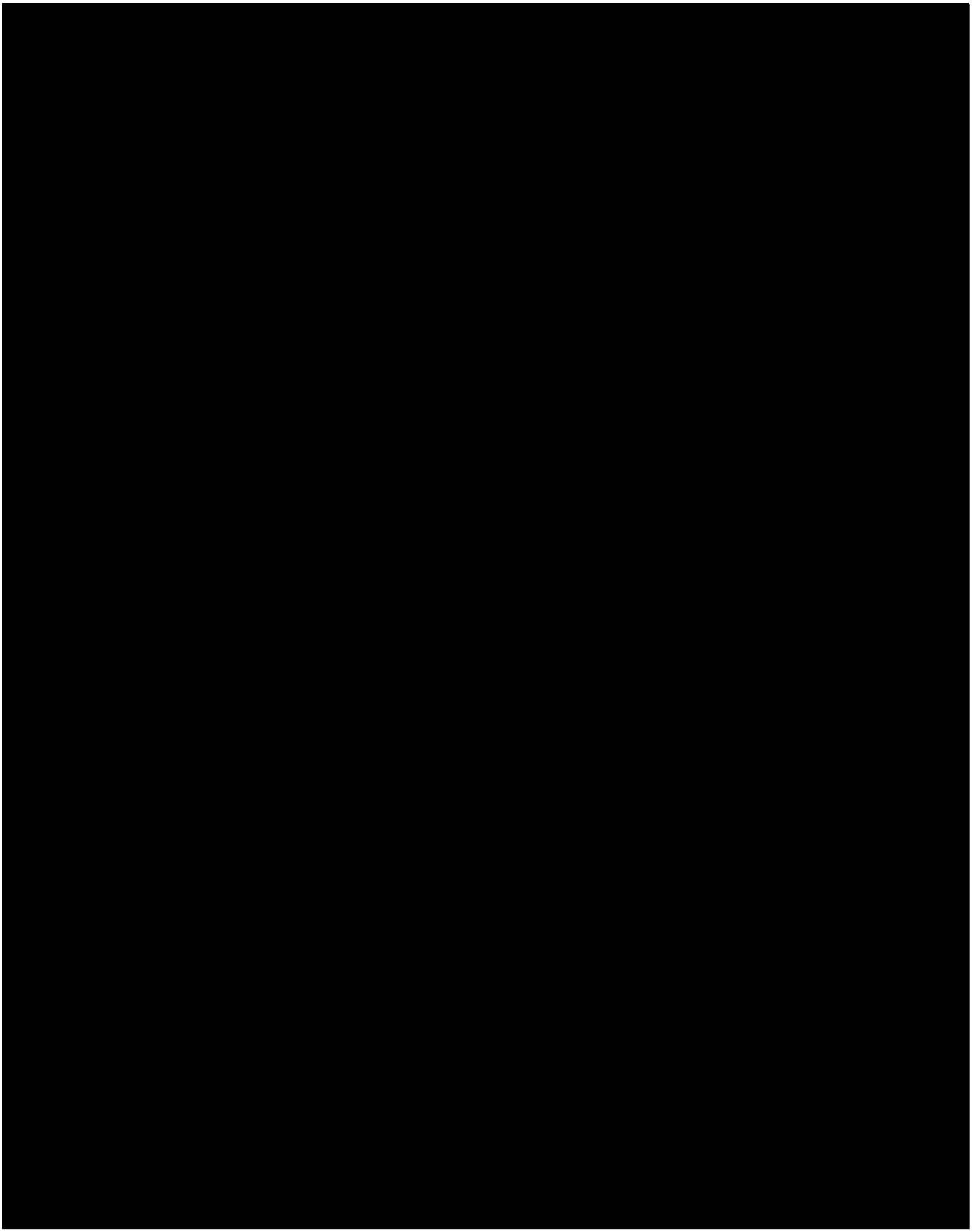
3. The Accused Systems Do Not Monitor Activity of a User Computer and Do Not Route Calls Based on the Monitored Activity of a User Computer

[redacted]

a. No Infringement Under ALE's Proposed Construction of "Monitored Activity of the User's Computer"

[redacted]

[3] A more detailed description of the '289 Patent is provided in Defendants' Markman Brief.



[redacted]

b. No Infringement Under Microsoft's Proposed Construction of "Monitored Activity of the User's Computer"

Microsoft construes "monitoring activity of a user computer" to mean "monitoring the status of a user computer." [redacted]

[redacted]

[redacted]

4. The Accused Systems Do Not Meet the '289 Patent's Requirement of Receiving an Indication of the Desire by a First Party to Set Up a Call with a Second Party

[redacted]

a. No Infringement Under ALE's Proposed Construction

The OXE system's Enterprise Switch is a PBX with traditional telephone switching functionality. (Ex. 5 (Leroy ITC Hrg Tr.) at 1081:11-1082:24.) [redacted]

[redacted]

[redacted]

b. No Infringement Under Microsoft's Proposed Construction

Microsoft's proposed construction of the "desires to establish telephone communication" limitation is "receiving at the computer network information from the telephone network that a telephone call from a first party to a second party has been initiated." [redacted]

[redacted]

5. The Accused Products Do Not "Determine When the Second Party is Available to Take the Call Originated by the First Party"

The '289 Patent requires "using the set of pre-determined rules to process i) the information received from the telephone network regarding the call being originated by the first party, and ii) information regarding the monitored activity of the user computer of the second party, ***to determine when the second party is available to take the call originated by the first party***." (Ex. 1 ('289 Patent) at 1:55-61.)

[redacted]

6. The Accused Systems Do Not Process Information at the Computer Network to Facilitate Connecting the Call

Claim 1 of the '289 Patent also requires "using the information processed at the computer network to facilitate connecting the call originated by the first party through the telephone network to the second party." (Ex. 1 ('289 Patent) at 18:62-65.) [redacted]

[redacted]

7. The Accused Systems Do Not Indirectly Infringe the '289 Patent

a. There Is No Contributory Infringement Because the Accused Products Have Substantial Non-Infringing Uses

As set forth in detail in the concurrently filed Opening Brief for Summary Judgment on the O'Neal Patents (the "O'Neal Patents Brief") at Section IV.E.1 (filed concurrently and

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[4] For the same reasons, the accused ALE OXO system does not infringe this limitation of the '289 Patent. (Hyde-Thomson Decl. at ¶63.)

incorporated herein by reference), Microsoft cannot meet its burden to show contributory infringement of the accused products because the accused products have substantial non-infringing uses. (*See also* Hyde-Thomson Decl. at ¶¶26-28.)

b. Microsoft Cannot Show Induced Infringement by ALE Because It Cannot Show Specific Intent To Encourage Infringement By Others

Microsoft also cannot meet its burden of proof for induced infringement. As set forth in the O'Neal Patents Brief at Section IV.E.2 (incorporated herein by reference), induced infringement under 35 U.S.C. § 271(b) requires a specific intent to encourage another to infringe the patent. Merely encouraging the acts that turn out to be an infringement is not enough. The defendant must: (1) know of the patent and intend; and (2) actively encourage its infringement. *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1306 (Fed. Cir. 2006) (*en banc* in relevant part). Microsoft has no evidence of the required specific intent.

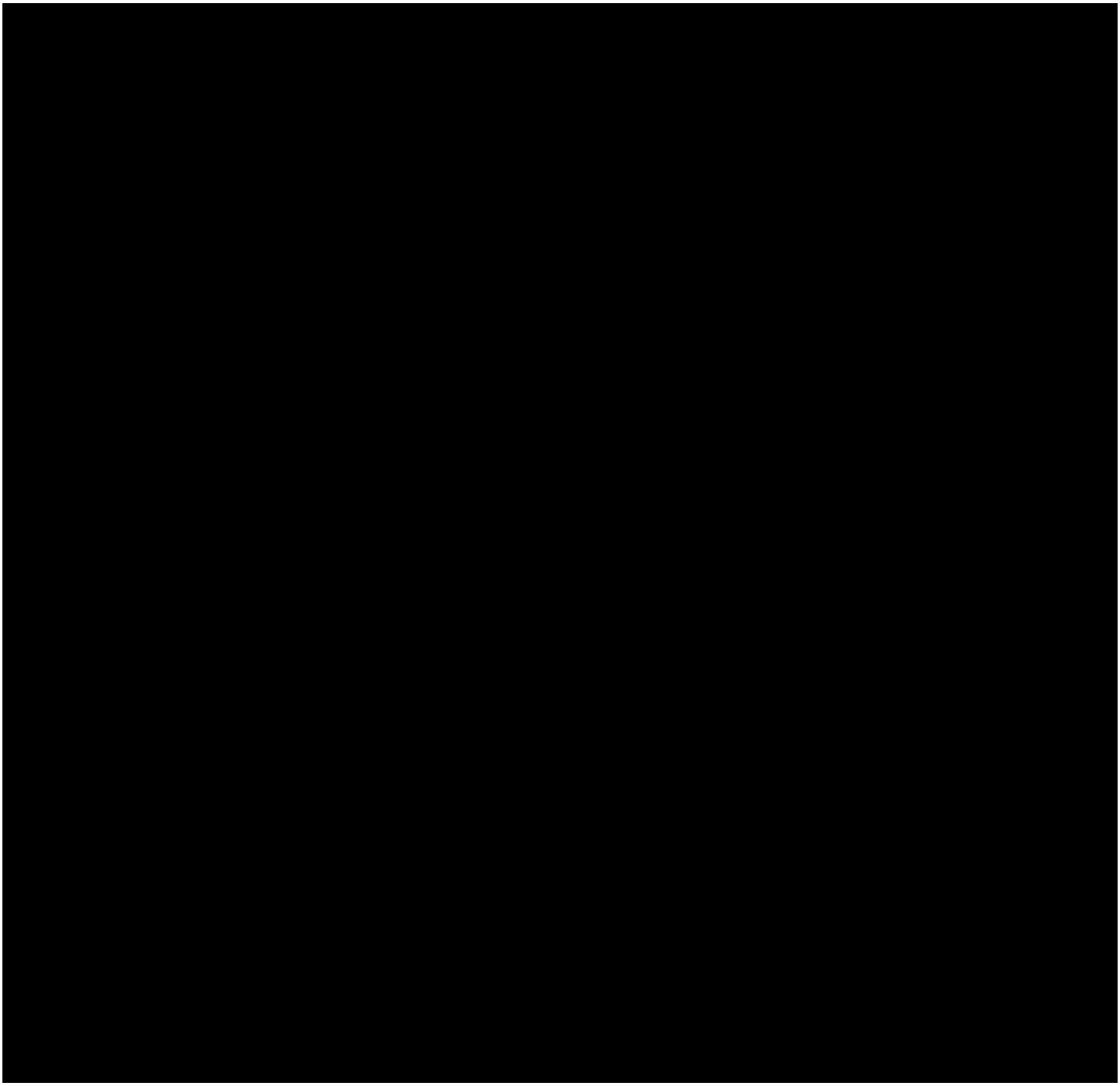
c. Microsoft Cannot Show Indirect Infringement by ALE Because It Cannot Show Performance of All of the Steps of the Method Claim Using the Accused Products

Finally, with respect to method claims 1 and 7, Microsoft has offered no evidence that any person in the United States has ever performed the steps required by these claims. *See Ormco v. Align Tech., Inc.*, 469 F.3d 1299, 1310-11 (Fed. Cir. 2006) ("Method claims are only infringed when the claimed process is performed, not by the sale of an apparatus capable of infringing use.") *See also* O'Neal Patents Brief, at Section IV.E.3 (legal argument incorporated herein by reference). Microsoft has offered no such evidence and has not put forth any such evidence in its infringement expert report. Thus, Microsoft cannot succeed on its claim of indirect infringement of claims 1 and 7 of the '289 Patent for this additional reason.

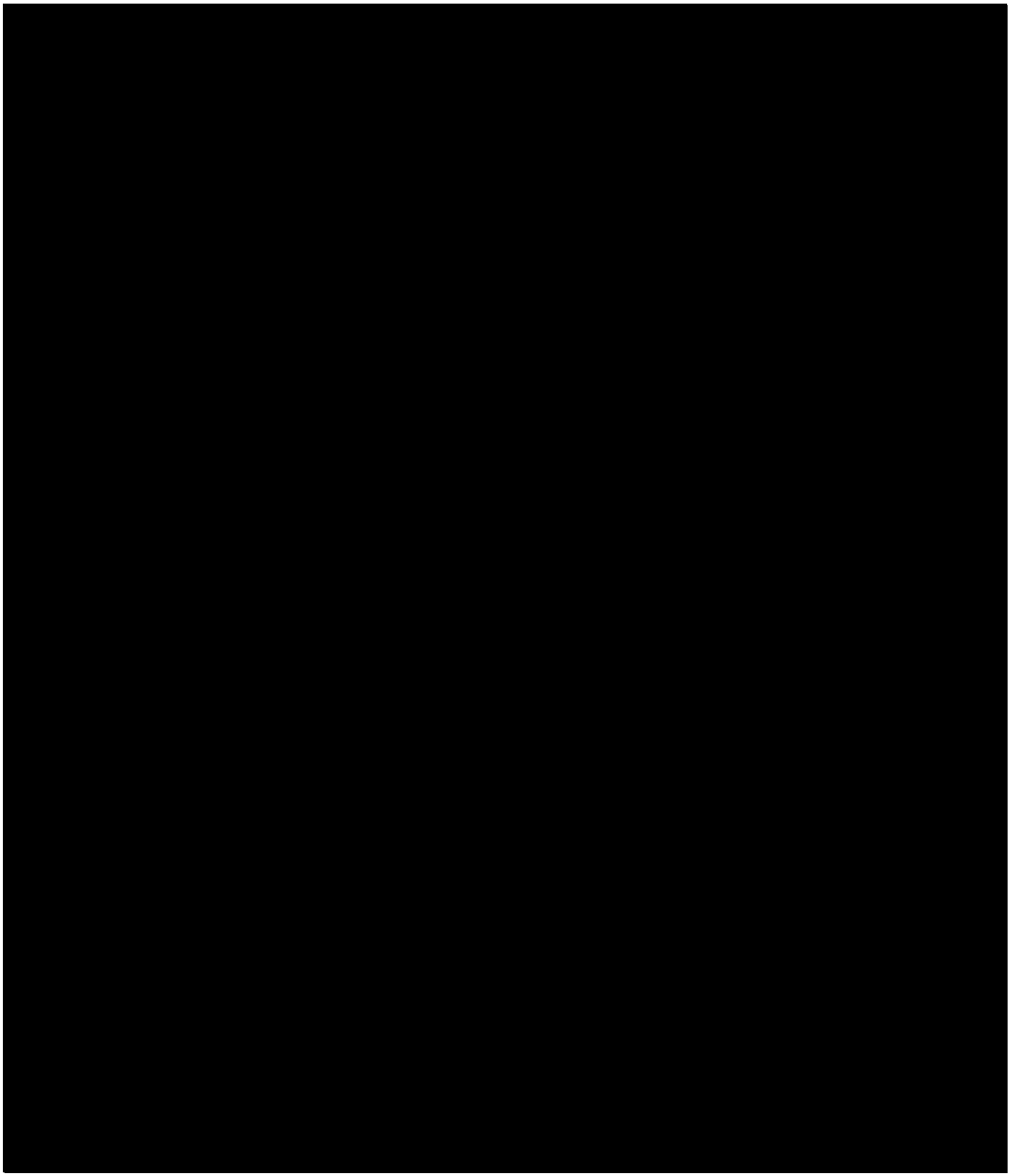
C. The Accused Genesys Product Does Not Infringe the Asserted Claims of the '289 Patent

1. The Accused Genesys Product

a. The Accused Product is a Combination of Software Applications



b. The Accused Product Routes Calls Based On Agent Availability or Agent Skills



2. The Accused Product Does Not Monitor "The Activity of a User's Computer"

[redacted]

[5] As demonstrated below, Microsoft's interpretations of this limitation results in Microsoft's construction effectively adopting Genesys' proposed construction, *i.e.*, computer activity means "active or idle." Accordingly, the following non-infringement analysis applies equally under both constructions.

a. The Accused Genesys Product Cannot Determine What an Agent is Doing On His Computer at the "Present" Time

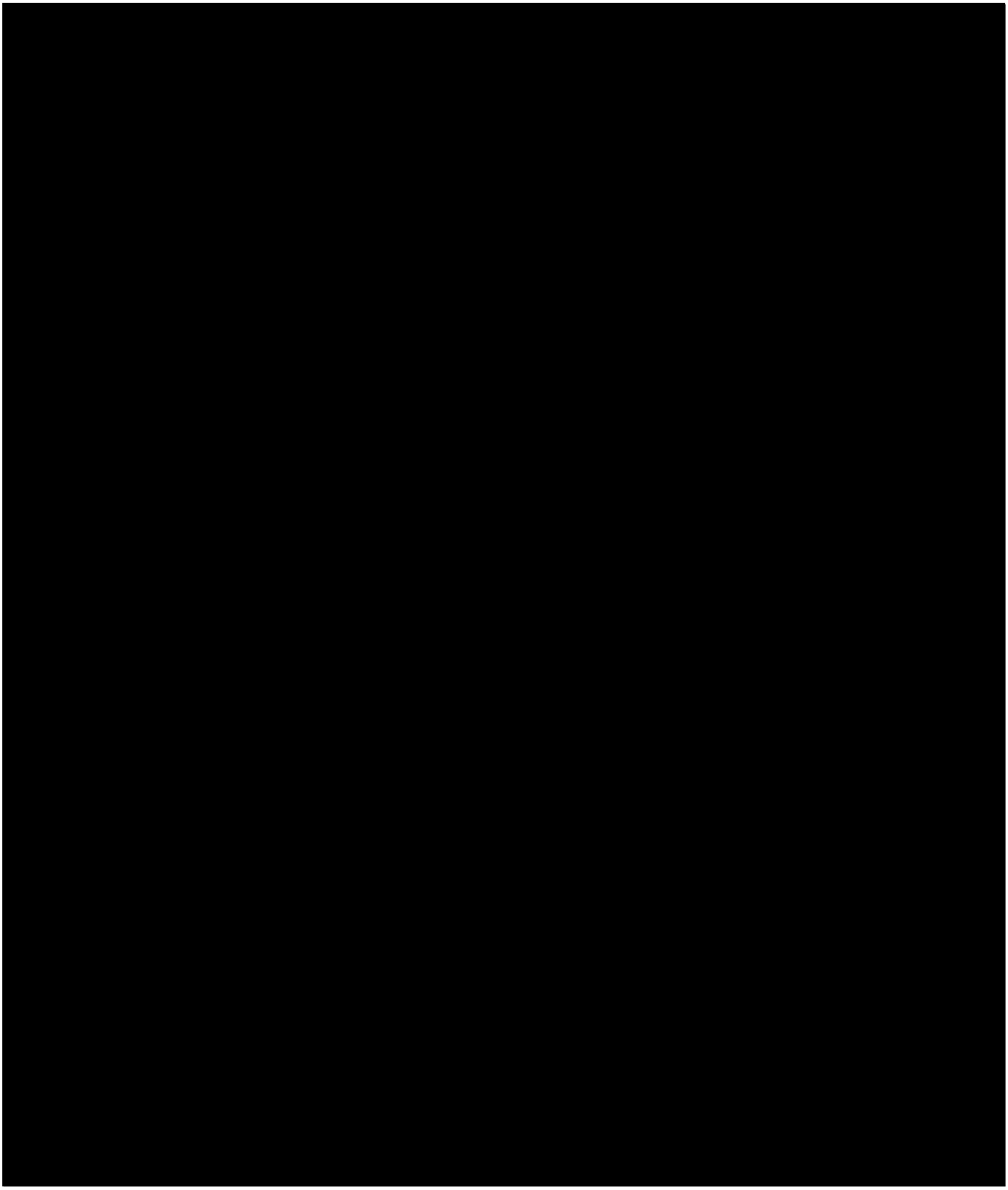
[redacted]

b. The Accused Genesys Product Only Maintains an Agent's State as to Whether an Agent Has Accepted or Ended a Chat

[redacted]

[6] U.S. Patent No. 5,999,965 ("Kelly"), filed December 7, 1999, discloses an Automatic Call Distribution server receiving an incoming call and routing the incoming call based on different criteria. The Kelly patent is discussed in detail in Expert Report Of Mr. Henry Hyde-Thomson Regarding Invalidity And Materiality (Corrected) ("Hyde-Thomson Rebuttal Report"). (*See* Ex. 11 (Hyde-Thomson Rebuttal Report) at ¶¶457-500.)

[redacted]



3. The Accused Genesys Product Does Not "Receiv[e] Information From the Telephone Network that a First Party From Whom a Call is Originating (i.e., Caller) Desires to Establish Telephone Communication With a Second Party"

The asserted claims require "at the computer network, receiving information from the telephone network that a first party from whom a call is originating desires to establish telephone communication with a second party." (Ex. 1 ('289 Patent) at 18:44-47, 19:32-35.) [redacted]

[redacted]

[redacted]

[redacted]

D. No Indirect Infringement

Nor can Microsoft establish indirect infringement of Inbound Voice. Indeed, Microsoft cannot even establish *prima facie* that that Inbound Voice does not have substantial non-infringing uses. (*See id.* at ¶26.) In addition, with respect to method claims 1 and 3, Microsoft has no evidence that any person in the United States has ever performed the steps required by these claims. *See Ormco*, 469 F.3d at 1310-11.

E. The '289 Patent is Invalid in View of the Chestnut Patent Under Microsoft's Construction

1. Overview of the Chestnut Patent

The Chestnut patent is U.S. Patent No. 6,041,114, entitled "Telecommute Server" and names Kevin L. Chestnut as the sole inventor ("Chestnut") (Ex. 13). The Chestnut patent issued as a United States patent on March 21, 2000, based on an application that was filed on March 27, 1997, and is therefore prior art to the '289 patent under 35 U.S.C. § 102(e). (Ex. 13 (Chestnut) at cover.)

The Chestnut patent was not before the Patent Office during the prosecution of the '289 patent. (*Id.*) The Chestnut patent relates to a telecommute server that "closely integrates a company's LAN with its telephone network and controls call forwarding based upon user activity on an associated computer terminal." (*Id.* at 2:25-28, 1:6-9.) The Chestnut patent discloses that the telecommute server can forward telephone calls "based upon the device used to log onto the computer network by the called party." (*Id.* at Abstract.) In particular, the Chestnut patent discloses that call forwarding can be based on "the called party's current or most recent network logon device." (*Id.* at 7:2-3.)

2. Chestnut Discloses Monitoring Activity of a User Computer Connected to the Computer Network under Microsoft's Construction

Claims 1 and 7 of the '289 Patent recite "monitoring activity of a user computer connected to the computer network and associated with the second party." (Ex. 1 ('289 Patent) at 18:48-51, 19:36-38.) Microsoft construes this limitation to mean monitoring the status of a user computer connected to the computer network and associated with second party. The Chestnut patent discloses this limitation under Microsoft's construction. (Ex. 13 (Chestnut) at 2:25-28, 2:34-40, 2:52-61, 3:53-60, 5:41-51, 6:64-7:4; Ex. 3 (Hyde-Thomson ITC Hrg Tr.) at 1397:7-19; Hyde-Thomson Decl. at ¶82.)

Microsoft argues that the "monitoring computer activity" element is not met because logging on to a computer network is different from being logged on to a computer network and the Chestnut patent focuses on the former. There is a clear distinction between logging on to the computer network and already being logged on to the computer network. The Chestnut patent discloses forwarding a telephone call based on the user's status as logged on to the computer network. (*see, e.g.*, Ex. 13 (Chestnut) at 2:34-44 ("***The call is forwarded based upon whether or not the called party is logged onto the data network.***").)

The Chestnut patent monitors whether and from where the called party's computer is logged onto or logged off of the computer network (the status of the computer) to determine where to forward a telephone call:

> The present invention, referred to as a telecommute server, is a method for controlling call forwarding using a computer connected to a data network and a telephone network. ***The call is forwarded based upon whether or not the called party is logged onto the data network. The forwarded call is directed to a telephone line associated with the terminal from which the called party is logged on.***

(*Id.* at 2:34-44.) The Chestnut patent discloses checking to see if the called party is logged onto a computer network to control processing of an incoming phone call:

> When an outside caller 30 places a call on the PSTN 6 the call is directed to the called party office extension 10 by the private branch exchange 4. Before the PBX sends the call to the called party office extension 10, the telecommute server 2 checks the computer network 8 to see if the called party is logged on. ***If the called party is logged on, the telecommute server 2 instructs the private branch exchange 4 to forward the call*** to the telephone extension associated with the device the called party has used to log onto the computer network 8.

(*Id.* at 4:48-57; *see also* Hyde-Thomson Decl. at ¶84.) The Chestnut patent also states that "[w]hen the telecommute server intercepts an incoming call ***to check if the called party is logged onto the computer network 8***, it also records any control signals that would normally be provided to the voice messaging system from the PBX 4 or PSTN 6. ***If the telecommute server identifies that the called party is logged on, then it will forward the call to the appropriate telephone number***." (Ex. 13 (Chestnut) at 5:41-48.) The Chestnut patent also states that call forwarding can be based on a predefined schedule and that the "system can also be set up to alter the schedule ***if it detects that the called party is logged onto a terminal*** associated with a different telephone extension than the one defined in the schedule." (*Id.* at 2:54-61; *see also* Ex. 3 (Hyde-Thomson ITC Hrg Tr.) at 1397:7-19 ("[W]ithin that definition of the status of the user computer would clearly be contained the concept of from where the computer is logged in to the network, over what connection it was logged in.").)

3. Chestnut Discloses "Using the Set of Pre-Determined Rules . . . to Determine When the Second Party is Available to Take the Call"

Claims 1 and 7 of the '289 Patent recite "using a set of pre-determined rules . . . to determine when the second party is available to take the call." (Ex. 1 ('289 Patent) at 18:55-61, 19:42-48.) Microsoft construes the phrase "monitored activity of the user computer of the second party" from this limitation of claim 1 to mean using user selectable criteria to control call processing to process information from tracking or checking the status of a user based on a user's computer. The Chestnut patent discloses this limitation. (Ex. 13 (Chestnut) at 4:48-5:2; Hyde-Thomson Decl. at ¶85.)

The Chestnut patent discloses checking to see if the called party is logged onto a computer network to control processing of an incoming phone call:

> When an outside caller 30 places a call on the PSTN 6 the call is directed to the called party office extension 10 by the private branch exchange 4. Before the PBX sends the call to the called party office extension 10, the telecommute server 2 checks the computer network 8 to see if the called party is logged on. ***If the called party is logged on, the telecommute server 2 instructs the private branch exchange 4 to forward the call*** to the telephone extension associated with the device the called party has used to log onto the computer network 8.

(Ex. 13 (Chestnut) at 4:48-57; *see also* Hyde-Thomson Decl. at ¶85.) Moreover, Chestnut discloses:

> ***If the called party was logged onto the computer network 8 from the called party office workstation 20, then the call would be directed to the called party office extension 10. If the called party were logged onto the computer network 8 from the called party home workstation 26, then the telecommute server 2 would instruct the PBX 4 to forward the call to called party home phone 22.*** The telecommute server 2 selects the telephone number to which incoming calls should be forwarded based upon a record stored in a memory which associates a forwarding telephone number, such as the number for called party home phone 22, with a network logon device, such as called party home workstation 26."

(Ex. 13 (Chestnut) at 4:58-5:2.)

The Chestnut patent explicitly states that the preprogrammed rules are used to determine when the called party is available to take a call, such as forwarding a call to the party based on whether the party has indicated that he is available at a certain time: "[t]he telecommute server 2, ***can also forward incoming calls based upon other criteria including day or date, time of day***, the identity of the caller, or any preprogrammed set of rules." (*Id.* at 5:18-26.)

4. Chestnut Discloses "Storing a Set of Predetermined Rules for Determining When the Second Party is Available to Take a Call from the First Party"

Claims 1 and 7 of the '289 Patent provide that "at the computer network, storing a set of predetermined rules for determining when the second party is available to take a call from the first party." (Ex. 1 ('289 Patent) at 18:51-54, 19:39-41.) This limitation is disclosed in the Chestnut reference. (Ex. 13 (Chestnut) at 4:58-5:2, 5:13-28, 6:34-44, 6:64-7:4; Hyde-Thomson Decl. at ¶86.)

The Chestnut patent discloses storing pre-determined rules for determining when a party is available to take a call:

> ***The telecommute server 2 may either have the call forwarding preferences preprogrammed into it or the forwarding preferences may be entered by the called party when he/she logs onto or off of the computer network 8.*** The telecommute server 2, can also forward incoming calls based upon other criteria including day or date, time of day, the identity of the caller, or any ***preprogrammed set of rules***. It is within the scope of the invention for the telecommute server 2 to utilize a set of forwarding preferences which are based the above criteria as well as other factors such as who else in the office is logged onto the computer network 8 or the telephone extensions currently in use.

(Ex. 13 (Chestnut) at 5:13-26; *see also* Hyde-Thomson Decl. at ¶¶87-88.) These predetermined rules are stored at the computer network. (Ex. 13 (Chestnut) at Fig. 1, 4:36-57.)

5. Chestnut Discloses "Using the Information Processed at the Computer Network to Facilitate Connecting the Call Originated by the First Party Through the Telephone Network to the Second Party"

The Chestnut patent discloses the limitation of claims 1 and 8 (not present in claim 7) that provides: "using the information processed at the computer network to facilitate connecting the call originated by the first party through the telephone network to the second party." (Ex. 1 ('289 Patent) at 18:62-65.) Chestnut discloses that the Telecommute server intercepts the call and then checks whether a called party is logged in. (Ex. 13 (Chestnut) at 5:37-45; *see also* Hyde-Thomson Decl. at ¶88.) [redacted]

The Chestnut patent also states:

> If the current called party network logon device is determined then the telephone number associated with the current called party network logon device is determined 44 by comparing the identity of the logon device with a list of telephone numbers indexed by logon device stored in a memory. Other factors including time of day, day of the week, date, and/or the identity of the calling party may be used to determine the forwarding number by providing additional indexing criteria. ***The call is then forwarded to the identified telephone number 50.*** If no telephone number is associated with the current logon device, then the call is forwarded to a voice messaging system 46 and a message is recorded 48.

(Ex. 13 (Chestnut) at 6:34-46.) The Chestnut Patent also discloses:

> Before the PBX sends the call to the called party office extension 10, the ***telecommute server 2 checks the computer network 8 to see if the called party is logged on***. If the called party is logged on, the telecommute server 2 instructs the private branch exchange 4 to forward the call to the telephone extension associated with the device the called party has used to log onto the computer network 8. If the called party was logged onto the computer network 8 from the called party office workstation 20, then the call would be directed to the called party office extension 10. If the called party were logged onto the computer network 8 from the called party home workstation 26, then the telecommute server 2 would instruct the PBX 4 to forward the call to called party home phone 22. ***The telecommute server 2 selects the telephone number to which incoming calls should be forwarded based upon a record stored in a memory which associates a forwarding telephone number***, such as the number for called party home phone 22, with a network logon device, such as called party home workstation 26.

(*Id.* at 4:50-5:12.)

6. Chestnut Discloses a "Computer Program Product"

The Chestnut patent discloses "a computer program product comprising" of the '289 Patent. (Ex. 1 ('289 Patent) at 19:24-25; Ex. 13 (Chestnut) at Abstract, 3:30-46; Ex. 3 (Hyde-Thomson ITC Hrg Tr.) at 1398:12-1399:12.) The Chestnut patent describes the invention as a "method and device for managing a telecommunications system, including call forwarding, with a computer network (LAN, WAN, etc.) integrated with a private branch exchange (PBX) connected to a Public Switched Network (PSTN)." (Ex. 13 (Chestnut) at Abstract.) Chestnut discloses "CTI applications deliver caller ID, automatic number identification (ANI), dialed number identification services (DNIS), and interactive voice response (IVR) dialed digits, such as a customer's account number, to a software application." (*Id.* at 1:47-51.) The Chestnut patent also states that the "present invention includes a call progress manager which controls the protocols to forward a call depending upon where the call originated and where it was forwarded to." (*Id.* at 3:43-46.) Mr. Hyde-Thomson explained that "the Chestnut patent includes the idea of a computer program product. Indeed, that's exactly what Mr. Chestnut … was basically making was software to run on PCs for computer telephony systems such as this product, telecommute server, or voice mail systems." (Ex. 3 (Hyde-Thomson ITC Hrg Tr.) at 1399:6-12.)

CONCLUSION

For the foregoing reasons, ALE and Genesys respectfully request that the Court grant ALE and Genesys' motion for summary judgments of non-infringement and invalidity of U.S. Patent No. 6,430,289.

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May 9, 2008

CERTIFICATE OF SERVICE

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EXHIBIT 1

US006430289B1

(12) **United States Patent**
Liffick

(10) **Patent No.: US 6,430,289 B1**
(45) **Date of Patent: Aug. 6, 2002**

(54) **SYSTEM AND METHOD FOR COMPUTERIZED STATUS MONITOR AND USE IN A TELEPHONE NETWORK**

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(73) Assignee: **Microsoft Corporation**, Redmond, WA (US)

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(22) Filed: **Apr. 13, 1999**

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(52) **U.S. Cl.** 379/900; 379/142.15; 370/352
(58) **Field of Search** 379/201.06, 209.07, 379/201.08, 201.1, 210.11, 142.15, 196, 197, 198, 199, 900; 370/352, 353, 354

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,533,102 A * 7/1996 Robinson et al. 379/142
5,946,381 A * 8/1999 Danne et al. 379/142
6,175,619 B1 * 1/2001 De Simone 379/93.21
6,169,795 B1 * 2/2001 Bauer et al. ..... 379/212 X
6,229,883 B1 * 5/2001 Kakizaki et al. 379/93.23

* cited by examiner

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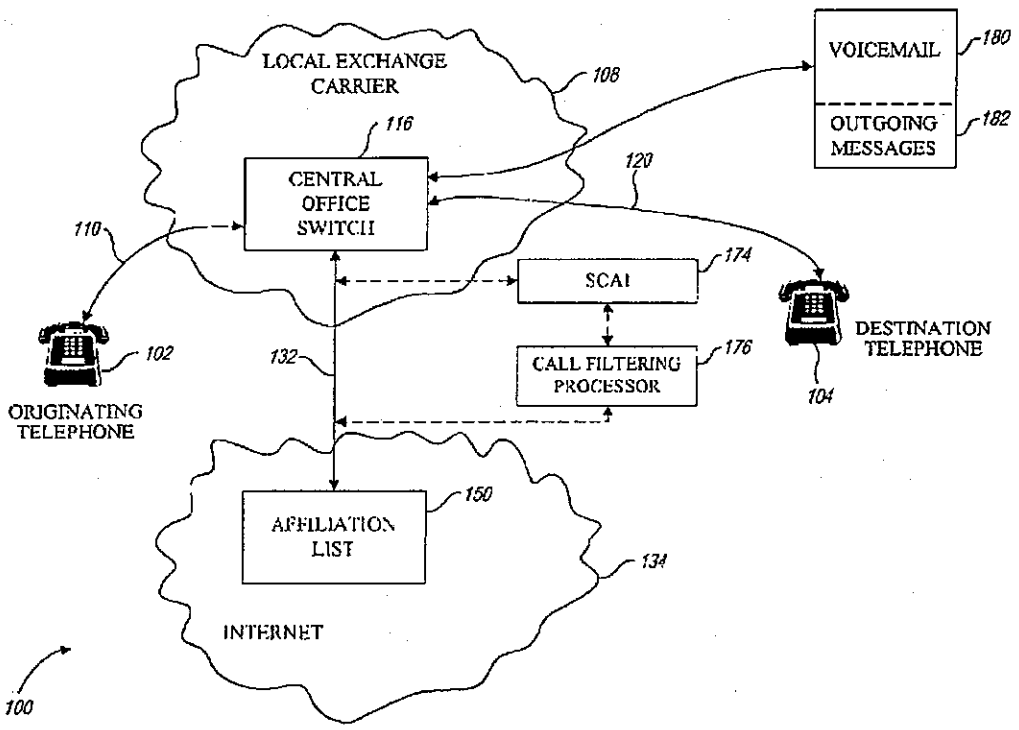
(74) *Attorney, Agent, or Firm*—Workman, Nydegger, Seeley

(57) **ABSTRACT**

A telecommunication system combines telephone technology and computer network technology to monitor a caller and callee's computer activity and to access call processing criteria selected by the caller and callee and stored on the computer network. A component of the telephone system, such as a central office switch, accesses the caller and callee call processing criteria. The system evaluates the call processing criteria and, when conditions for both caller and callee are met, the telephone system initiates a telephone call between the caller and callee. The call processing criteria may include accepting all calls, no calls, or calls only from specified parties. In addition, the call processing criteria can vary in accordance with the time of day or an individual's personal preferences, or status, such as when an individual is in a meeting. A user's computer activity may also be monitored and the computer status as idle or active may be reported to the computer network as part of the call processing criteria.

20 Claims, 10 Drawing Sheets



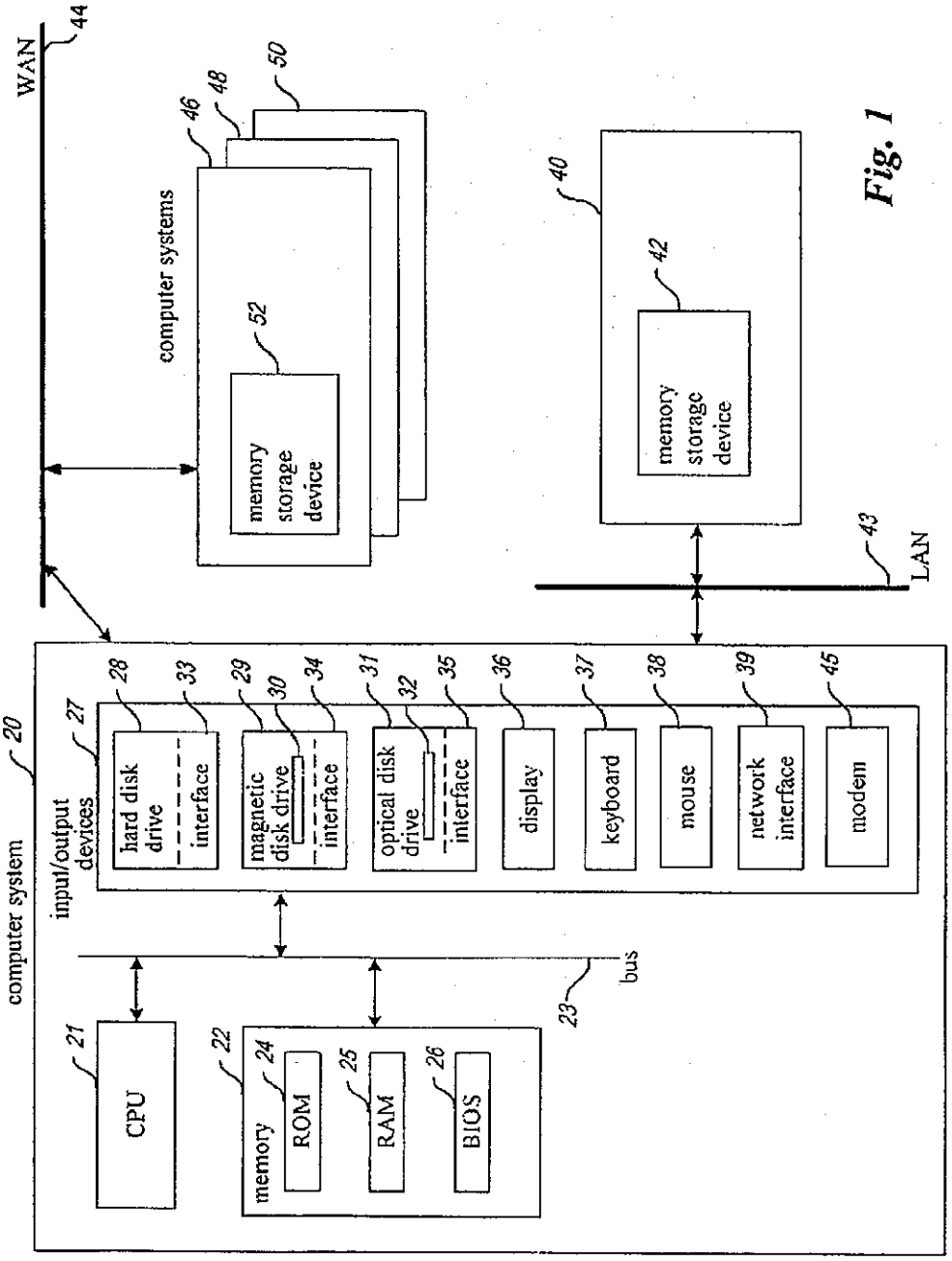

WAN
44
46
48
50
computer systems
memory storage device
52
40
42
memory storage device
43
LAN
computer system
20
input/output devices
27
28
hard disk drive
interface
33
29
magnetic disk drive
30
interface
34
31
optical disk drive
32
interface
35
36
display
37
keyboard
38
mouse
39
network interface
45
modem
bus
23
21
CPU
22
memory
24
ROM
25
RAM
26
BIOS

Fig. 1

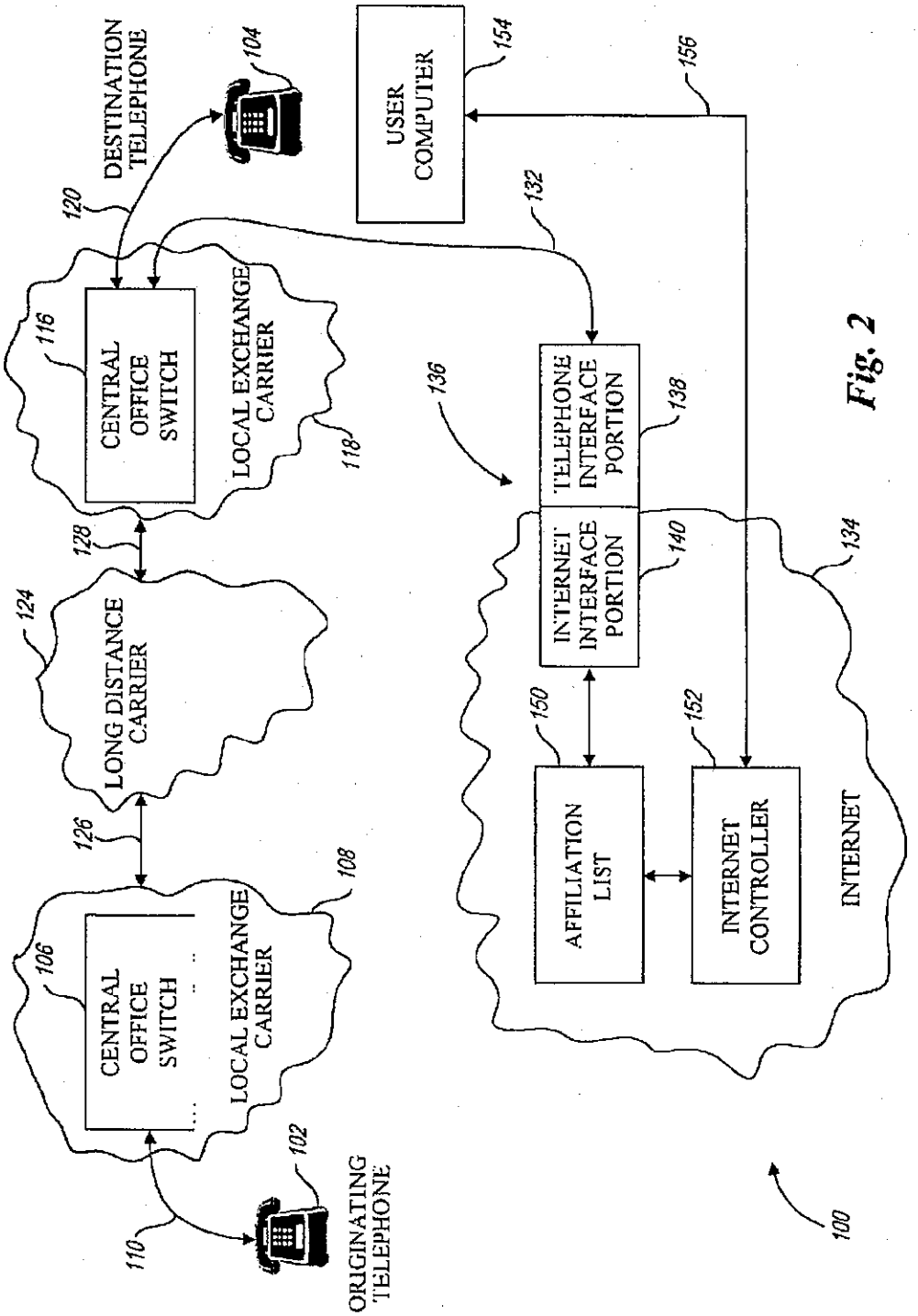

DESTINATION TELEPHONE
104
120
USER COMPUTER
154
156
132
CENTRAL OFFICE SWITCH
116
LOCAL EXCHANGE CARRIER
118
136
TELEPHONE INTERFACE PORTION
138
128
INTERNET INTERFACE PORTION
140
134
LONG DISTANCE CARRIER
124
150
152
126
AFFILIATION LIST
INTERNET CONTROLLER
INTERNET
CENTRAL OFFICE SWITCH
106
LOCAL EXCHANGE CARRIER
108
102
110
ORIGINATING TELEPHONE
100

Fig. 2

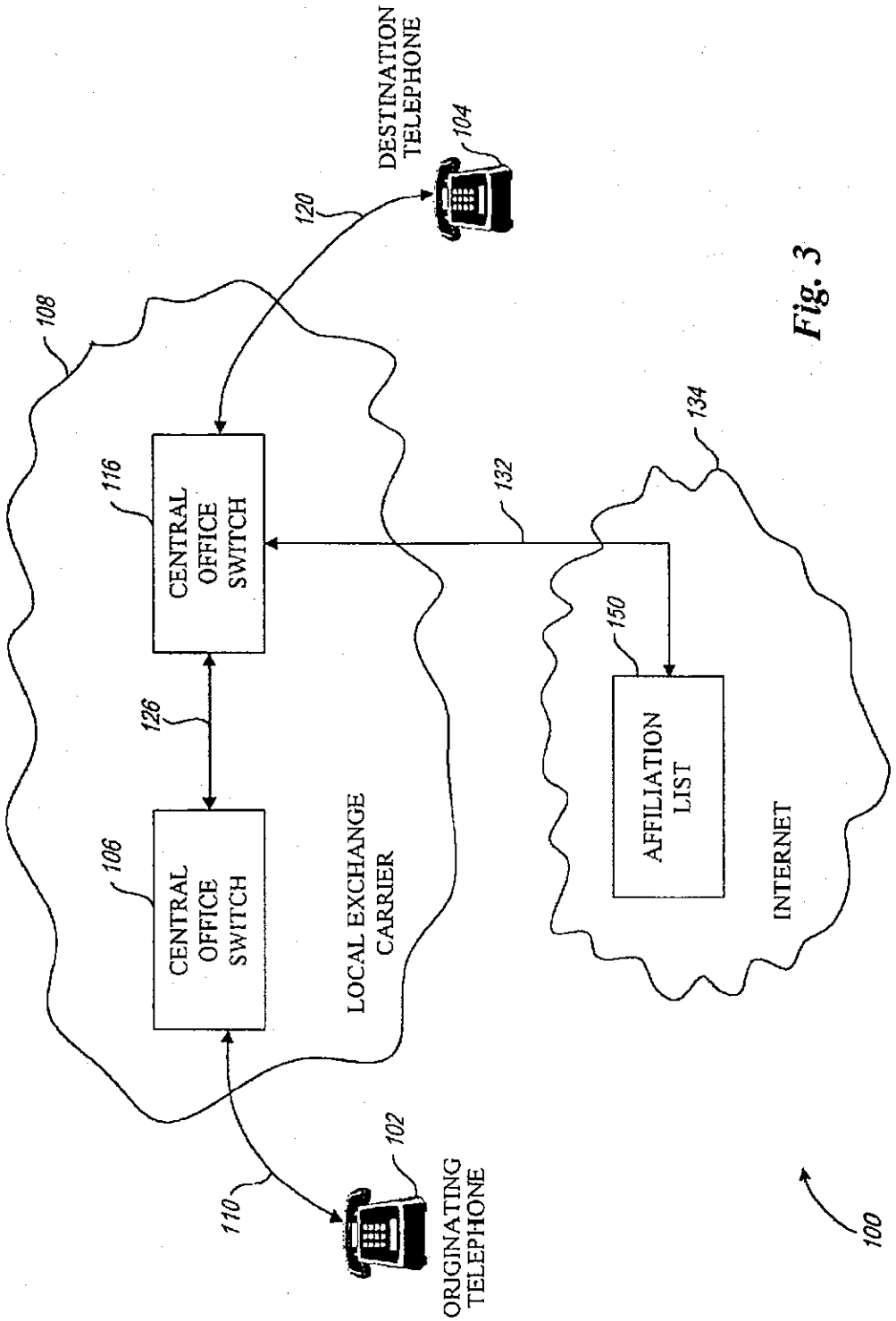

DESTINATION TELEPHONE
104
120
108
116
CENTRAL OFFICE SWITCH
132
134
126
150
AFFILIATION LIST
106
CENTRAL OFFICE SWITCH
LOCAL EXCHANGE CARRIER
INTERNET
102
110
ORIGINATING TELEPHONE
100

Fig. 3

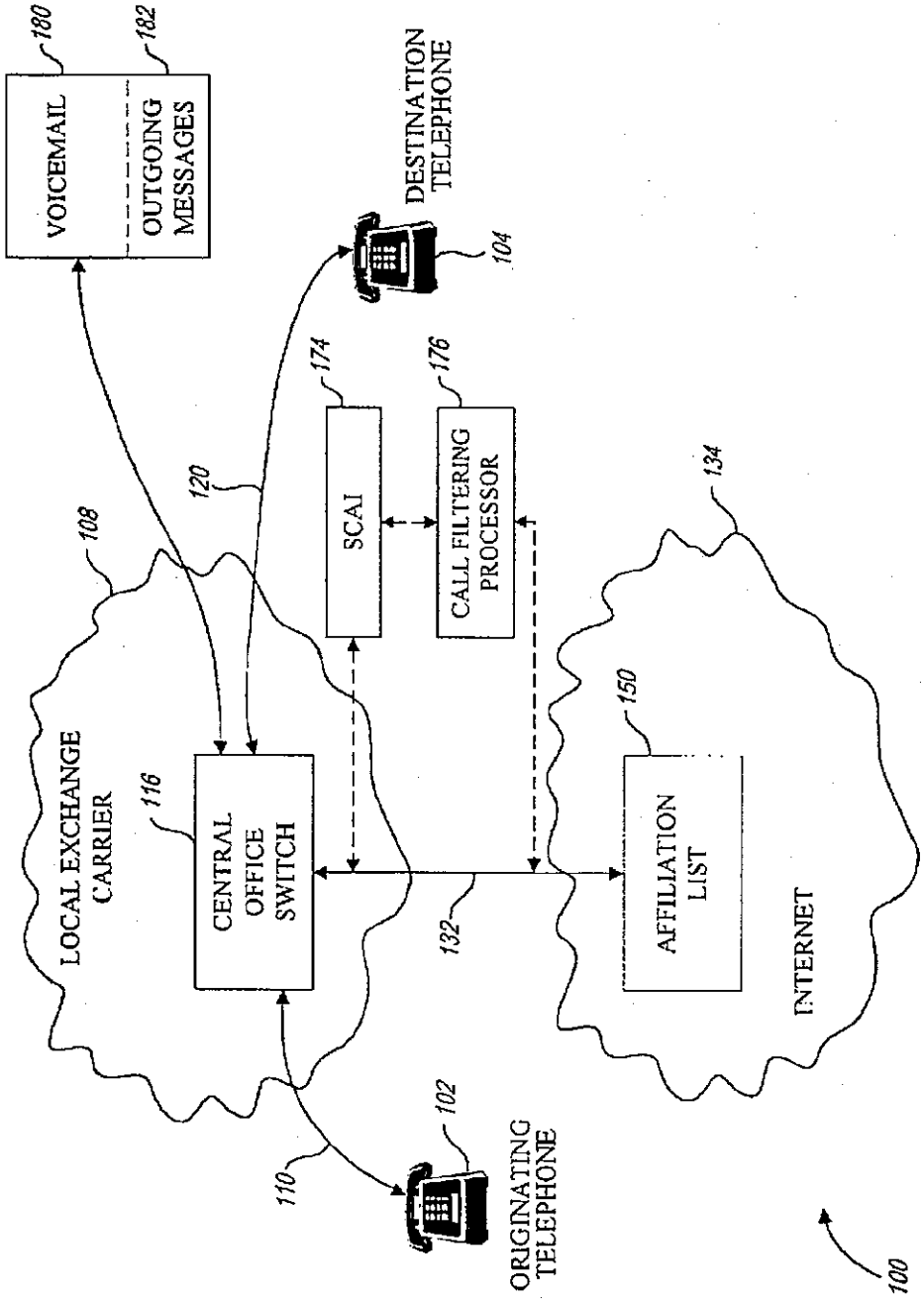

VOICEMAIL
OUTGOING MESSAGES
180
182
DESTINATION TELEPHONE
104
174
176
SCAI
CALL FILTERING PROCESSOR
120
108
134
LOCAL EXCHANGE CARRIER
116
CENTRAL OFFICE SWITCH
150
AFFILIATION LIST
INTERNET
132
110
102
ORIGINATING TELEPHONE
100

Fig. 4

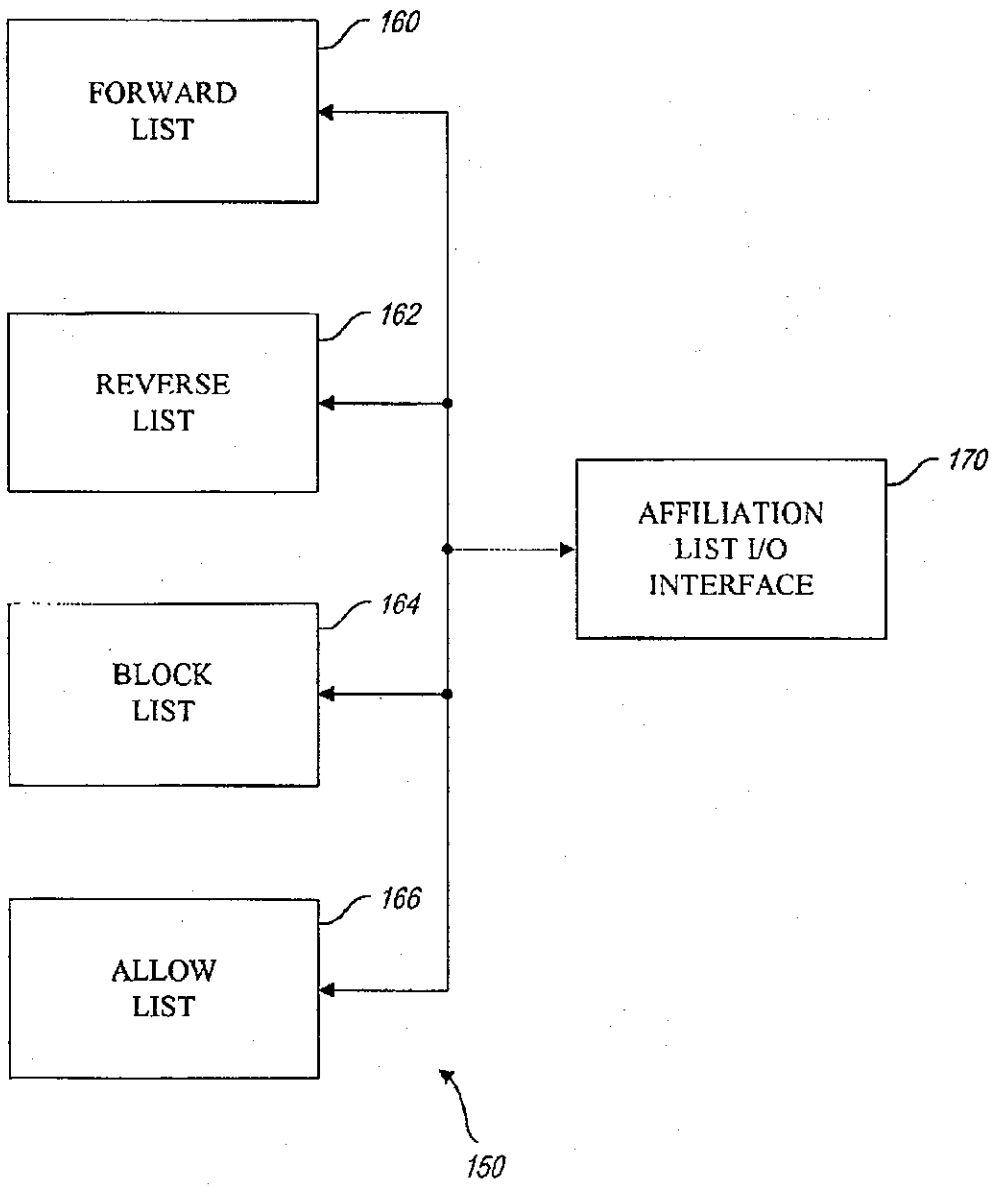

160
FORWARD LIST
162
REVERSE LIST
170
AFFILIATION LIST I/O INTERFACE
164
BLOCK LIST
166
ALLOW LIST
150

Fig. 5

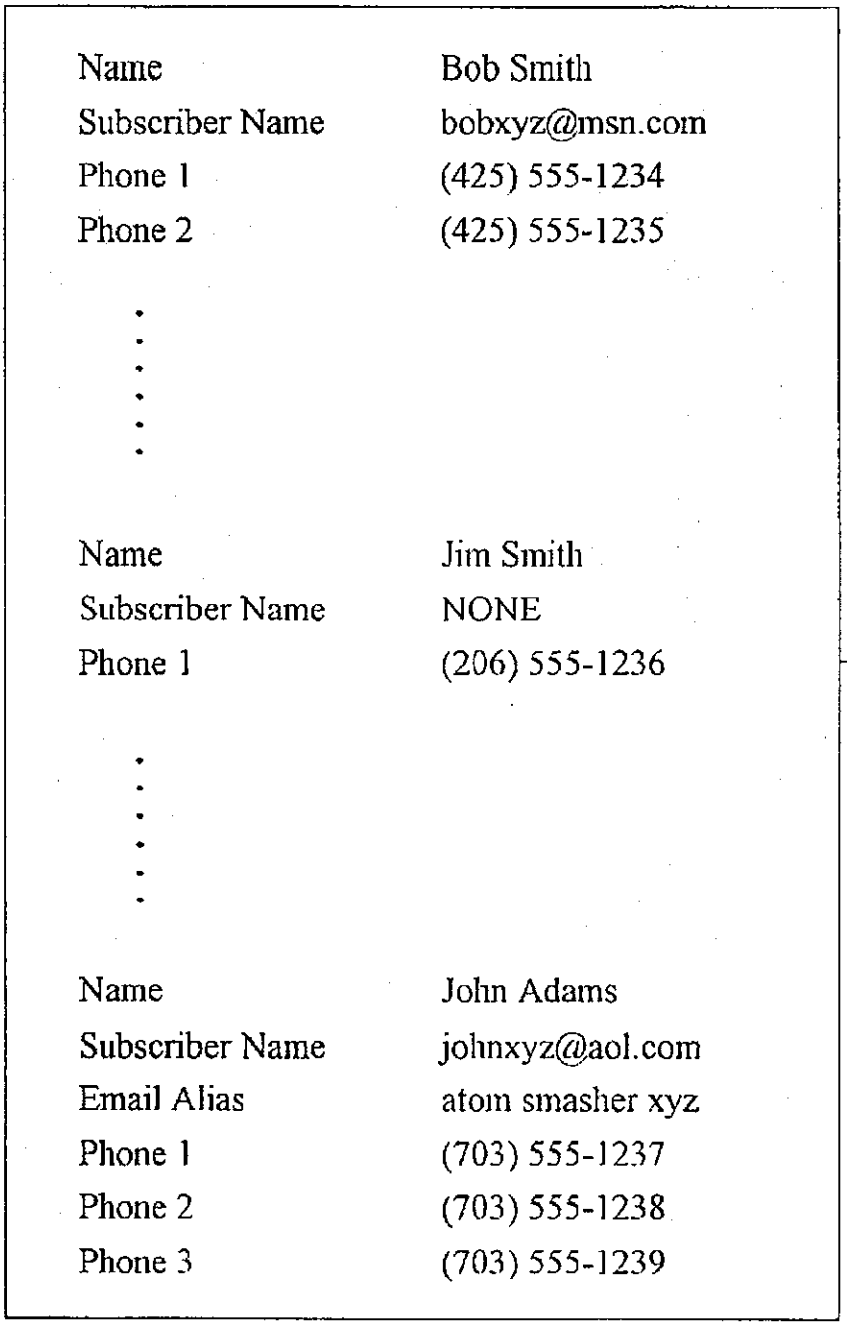

Name Bob Smith
Subscriber Name bobxyz@msn.com
Phone 1 (425) 555-1234
Phone 2 (425) 555-1235
Name Jim Smith
Subscriber Name NONE
Phone 1 (206) 555-1236
166
Name John Adams
Subscriber Name johnxyz@aol.com
Email Alias atom smasher xyz
Phone 1 (703) 555-1237
Phone 2 (703) 555-1238
Phone 3 (703) 555-1239

Fig. 6

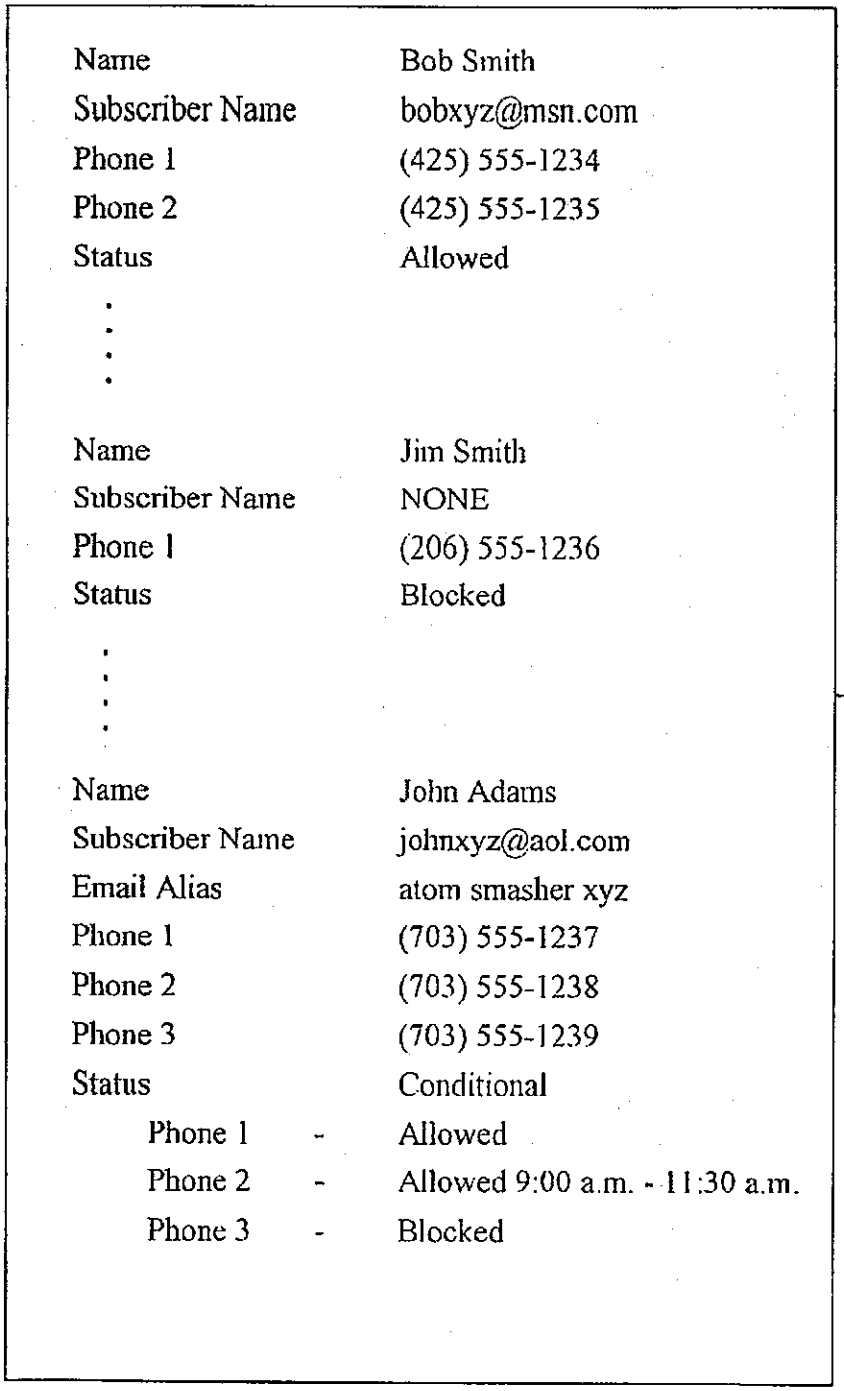

Name Bob Smith
Subscriber Name bobxyz@msn.com
Phone 1 (425) 555-1234
Phone 2 (425) 555-1235
Status Allowed
Name Jim Smith
Subscriber Name NONE
Phone 1 (206) 555-1236
Status Blocked
Name John Adams
Subscriber Name johnxyz@aol.com
Email Alias atom smasher xyz
Phone 1 (703) 555-1237
Phone 2 (703) 555-1238
Phone 3 (703) 555-1239
Status Conditional
Phone 1 - Allowed
Phone 2 - Allowed 9:00 a.m. - 11:30 a.m.
Phone 3 - Blocked
150

Fig. 7

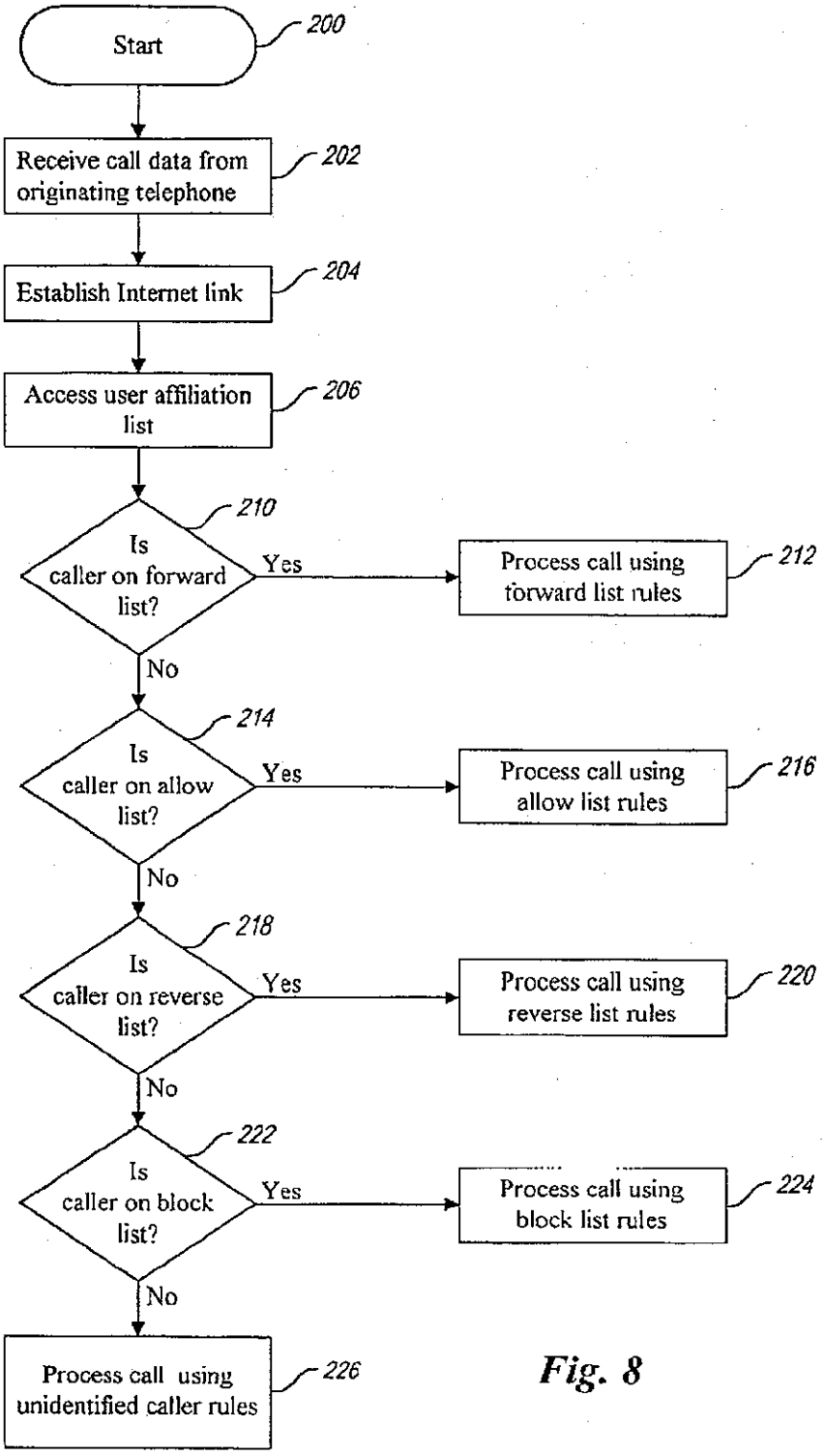

Start
200
Receive call data from originating telephone
202
Establish Internet link
204
Access user affiliation list
206
Is caller on forward list?
210
Yes
Process call using forward list rules
212
No
Is caller on allow list?
214
Yes
Process call using allow list rules
216
No
Is caller on reverse list?
218
Yes
Process call using reverse list rules
220
No
Is caller on block list?
222
Yes
Process call using block list rules
224
No
Process call using unidentified caller rules
226

Fig. 8

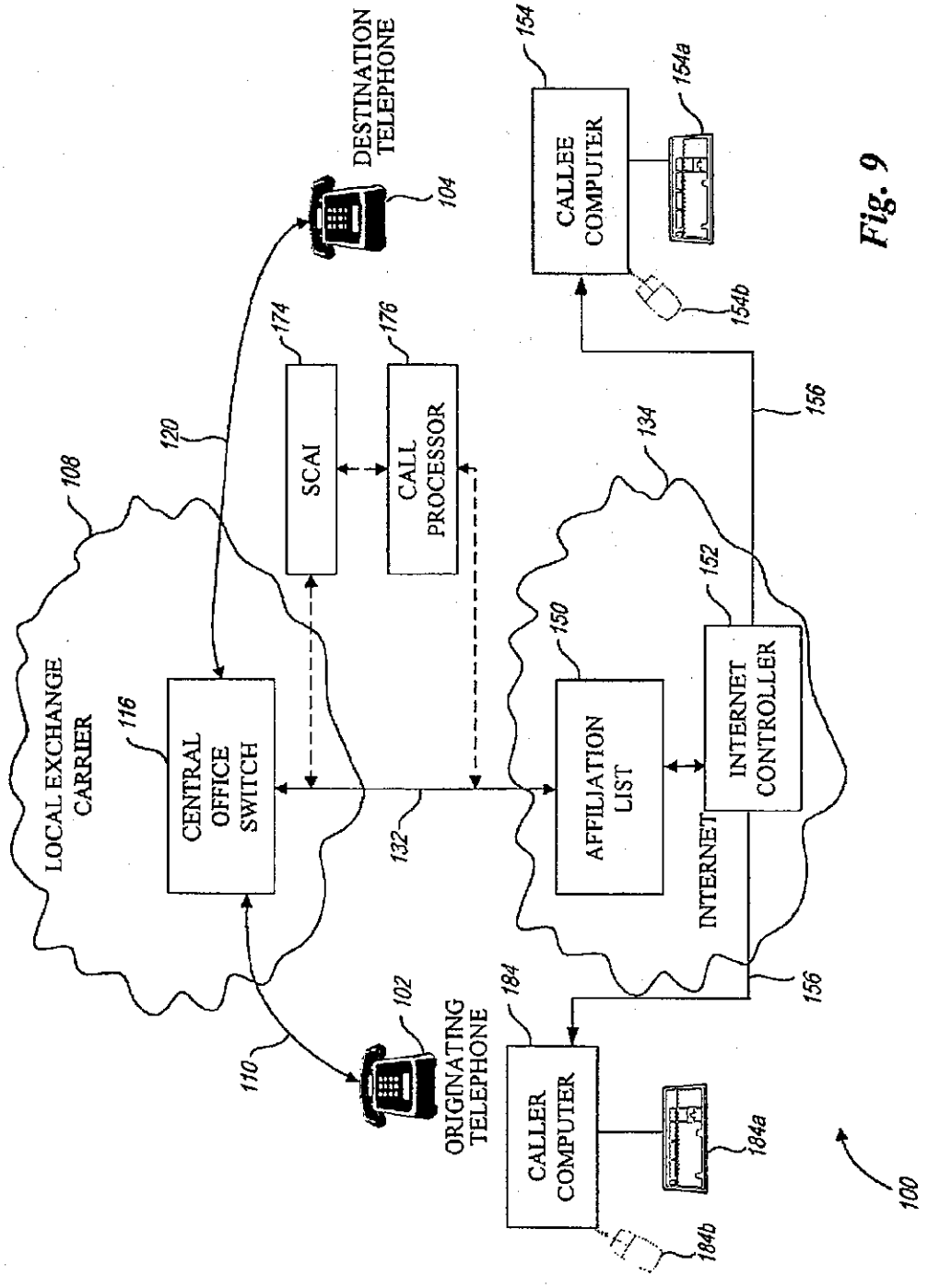

DESTINATION TELEPHONE
104
CALLEE COMPUTER
154
154a
154b
156
174
176
SCAI
CALL PROCESSOR
120
108
134
LOCAL EXCHANGE CARRIER
116
CENTRAL OFFICE SWITCH
132
150
152
AFFILIATION LIST
INTERNET CONTROLLER
INTERNET
156
102
ORIGINATING TELEPHONE
110
184
CALLER COMPUTER
184a
184b
100

Fig. 9

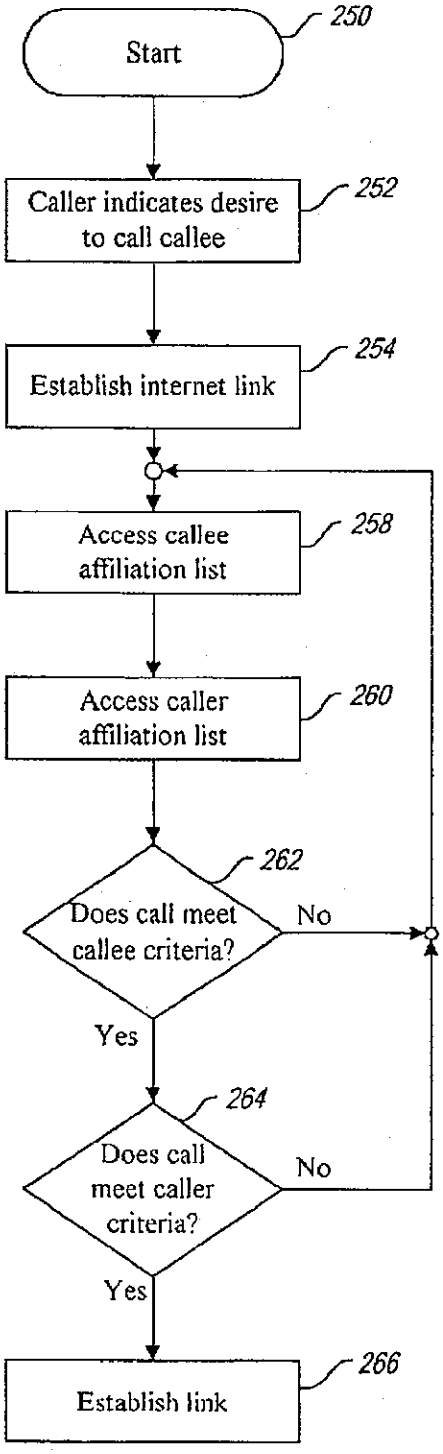

Start
250
Caller indicates desire to call callee
252
Establish internet link
254
Access callee affiliation list
258
Access caller affiliation list
260
Does call meet callee criteria?
262
No
Yes
Does call meet caller criteria?
264
No
Yes
Establish link
266

Fig. 10

SYSTEM AND METHOD FOR COMPUTERIZED STATUS MONITOR AND USE IN A TELEPHONE NETWORK

TECHNICAL FIELD

The present invention is directed generally to telecommunications and, more particularly, to a system and method for establishing a telephone communication link using status reporting information from an independent computer network.

BACKGROUND OF THE INVENTION

Telephone communication systems have increased in both size and complexity. Early telephone systems required a human operator to manually connect an originating telephone with a destination telephone. With the introduction of automatic switching technology, the need for human operators to connect each and every call disappeared. However, even automated switches did not provide the wide range of features available on most telephone systems, such as voicemail, caller identification, call waiting, call forwarding, three-way calling and the like. Most telephone systems today include these features and allow the customer to select one or more features to customize their telephone service. With features such as voicemail, the telephone switching system must recognize when the destination telephone is either busy or remains unanswered. If either of these conditions occur, the calling party is routed to the voicemail service associated with the destination telephone.

Despite these improvements, telephone systems are incapable of determining when a particular recipient (i.e., a callee) may be available to receive a call. The caller has no choice but to place a call to the destination telephone and hope that the callee answers. Alternatively, the caller may leave a voicemail indicating a specific time at which the caller will place yet another call. This is an undesirable activity since it requires multiple calls, thus utilizing telecommunication capabilities in an inefficient manner. In addition, repeated or failed attempts to actually reach the callee are a waste of human resources since the parties must often call back and forth to each other a number of times before actually reaching the desired party. Therefore, it can be appreciated that there is a significant need for a system and method that can establish a telephone communication link when both parties are available to communicate. The present invention provides this and other advantages as will be apparent from the following detailed description and accompanying figures.

SUMMARY OF THE INVENTION

A system to specify user-selectable criteria for call processing is implemented on a telephone system, such as a public switched telephone network (PSTN). The user-specified call processing criteria is stored on a network that is accessible by the user for data entry and/or editing, and is also accessible by the PSTN to determine whether call processing criteria exists for the particular caller. The Internet provides a readily available data structure for storage of the user-selectable call processing criteria. The user can establish a database stored on the Internet in association with the user's telephone number and indicating the user-selectable call processing criteria for one or more potential callers.

The caller may be identified by caller identification data, such as automatic number identification (ANI). Based on the destination telephone number and the caller identification data, the PSTN accesses the Internet and examines an affiliation list corresponding to the destination telephone number. If the caller identification data is present in the affiliation list, the call may be processed in accordance with the user-specified criteria for that particular caller.

Both the caller and callee can specify user-selectable call processing criteria. The potential callee can specify call processing criteria for all incoming calls, such as providing a list of individuals from whom the person will accept calls, a list of individuals from whom the person will not accept calls, or conditional criteria, such as accepting or blocking calls during certain times of day or during certain periods of activity, such as when the user may be otherwise occupied and unwilling to accept an incoming call. In addition, the potential callee's computer activity may be monitored and the status of the computer as idle or active may be reported to the computer network. The caller indicates a desire to establish a communication link with the callee. The computer network accesses the caller's call processing criteria and the callee's call processing criteria. The call processing criteria for both the caller and callee are analyzed and when all conditions are met, a telephone communication link is established between an originating telephone associated with the caller and a destination telephone associated with the callee.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a computer system that includes components to implement the system of the present invention.

FIG. 2 is a functional block diagram outlining the operation of the present invention.

FIG. 3 is a functional block diagram of an alternate telecommunications configuration implementing the present invention.

FIG. 4 is a functional block diagram of another alternative telecommunications configuration implementing the present invention.

FIG. 5 is a functional block diagram providing details of the affiliation list of the system of FIG. 2.

FIG. 6 illustrates sample data provided in the list of FIG. 5.

FIG. 7 illustrates additional sample data provided in the list of FIG. 3.

FIG. 8 is a flowchart illustrating the operation of the system of FIG. 2.

FIG. 9 is a functional block diagram illustrating the system of the present invention to process a call in accordance with both a caller and callee call processing criteria.

FIG. 10 is a flowchart illustrating the operation of the system of FIG. 9.

DETAILED DESCRIPTION OF THE INVENTION

Existing telephone technology does not provide the telephone subscriber with a technique for controlling access to the user's telephone. Features such as caller ID identify the caller, but do not control access to the user's telephone. Thus, the conventional telephone system forwards the user to extreme options. The user may answer all incoming calls or may choose not to answer any incoming calls. However, the present invention provides selective options in between these two extremes. The present invention combines telephone technology with Internet technology to allow the user

to "filter" incoming calls based on user-selected criteria. In particular, the user may establish a series of lists, stored on the Internet in association with the user's telephone, to filter incoming calls and thereby control access to the user's telephone. In addition, it is possible to monitor the activity or status of both a caller and a callee and establish a communication link between the caller's telephone and the callee's telephone when status data indicates that both are available for a telephone call.

FIG. 1 and the following discussion are intended to provide a brief, general description of a suitable computing environment in which the invention may be implemented. Although not required, the invention will be described in the general context of computer-executable instructions, such as program modules, being executed by a personal computer. Generally, program modules include routines, programs, objects, components, data structures, etc. that perform particular tasks or implement particular abstract data types. Moreover, those skilled in the art will appreciate that the invention may be practiced with other computer system configurations, including hand-held devices, multiprocessor systems, microprocessor-based or programmable consumer electronics, network PCs, minicomputers, mainframe computers, and the like. The invention may also be practiced in distributed computing environments where tasks are performed by remote processing devices that are linked through a communications network. In a distributed computing environment, program modules may be located in both local and remote memory storage devices.

With reference to FIG. 1, an exemplary system for implementing the invention includes a general purpose computing device in the form of a conventional personal computer **20**, including a processing unit **21**, a system memory **22**, and a system bus **23** that couples various system components including the system memory to the processing unit **21**. The system bus **23** may be any of several types of bus structures including a memory bus or memory controller, a peripheral bus, and a local bus using any of a variety of bus architectures. The system memory **22** includes read only memory (ROM) **24** and random access memory (RAM) **25**. A basic input/output system **26** (BIOS), containing the basic routines that helps to transfer information between elements within the personal computer **20**, such as during start-up, may be stored in ROM **24**.

The personal computer **20** further includes input/output devices **27**, such as a hard disk drive **28** for reading from and writing to a hard disk, not shown, a magnetic disk drive **29** for reading from or writing to a removable magnetic disk **30**, and an optical disk drive **31** for reading from or writing to a removable optical disk **32** such as a CD ROM or other optical media. The hard disk drive **28**, magnetic disk drive **29**, and optical disk drive **31** are connected to the system bus **23** by a hard disk drive interface **33**, a magnetic disk drive interface **34**, and an optical drive interface **35**, respectively. The drives and their associated computer-readable media provide nonvolatile storage of computer readable instructions, data structures, program modules and other data for the personal computer **20**. Although the exemplary environment described herein employs a hard disk, a removable magnetic disk **30** and a removable optical disk **32**, it should be appreciated by those skilled in the art that other types of computer readable media which can store data that is accessible by a computer, such as magnetic cassettes, flash memory cards, digital video disks, Bernoulli cartridges, random access memories (RAMs), read only memories (ROM), and the like, may also be used in the exemplary operating environment. Other I/O devices **27**, such as a display **36**, keyboard **37**, mouse **38**, and the like may be included in the personal computer **20** and function in a known manner. For the sake of brevity, other components, such as a joystick, sound board and speakers are not illustrated in FIG. 1.

The personal computer **20** may also include a network interface **39** to permit operation in a networked environment using logical connections to one or more remote computers, such as a remote computer **40**. The remote computer **40** may be another personal computer, a server, a router, a network PC, a peer device or other common network node, and typically includes many or all of the elements described above relative to the personal computer **20**, although only a memory storage device **42** has been illustrated in FIG. 1. The logical connections depicted in FIG. 1 include a local area network (LAN) **43** and a wide area network (WAN) **44**. Such networking environments are commonplace in offices, enterprise-wide computer networks, intranets and the Internet.

When used in a LAN networking environment, the personal computer **20** is connected to the LAN **43** through the network interface **39**. When used in a WAN networking environment, the personal computer **20** typically includes a modem **45** or other means for establishing communications over the wide area network **44**, such as the Internet. The modem **45**, which may be internal or external, permits communication with remote computers **46-50**. In a networked environment, program modules depicted relative to the personal computer **20**, or portions thereof, may be stored in the remote memory storage device **42** via the LAN **51** or stored in a remote memory storage device **52** via the WAN **44**. It will be appreciated that the network connections shown are exemplary and other means of establishing a communications link between the computers may be used.

The present invention is embodied in a system **100** illustrated in the functional diagram of FIG. 2. In a typical telephone communication, an originating telephone **102** is operated by the caller to place a call to a destination telephone **104**. The originating telephone generates signals that are detected by a central office switch **106** operated by a local exchange carrier (LEC) **108**. The LEC **108** is the telephone service provider for the calling party. The originating telephone **102** is coupled to the central office switch **106** via a communication link **110**. As those skilled in the art can appreciate, the communication link **110** may be a hard-wired connection, such as a fiber optic, copper wire, or the like.

Alternatively, the communication link **110** may be a wireless communication link if the originating phone **102** is a cellular telephone or some other form of wireless telephone.

Similarly, the destination telephone **104** is coupled to a central office switch **116** operated by a local exchange carrier (LEC) **118**. The destination telephone **104** is coupled to the central office switch **116** via a communication link **120**. The communication link **120** may be a hard-wired communication link or a wireless communication link, as described above with respect to the communication link **110**. The present invention is not limited by the specific form of communication link or central office switch.

The LEC **108** establishes a communication link with the LEC **118**. As illustrated in FIG. 2, the communication link between the LEC **108** and the LEC **118** is through a long distance carrier (LDC) **124**. The LEC **108** establishes a communication link **126** with the LDC **124** which, in turn, establishes a communication link **128** with the LEC **118**. If

the telephone call from the originating telephone **102** to the destination telephone **104** is not a long distance call, the LDC **124** is not required. In this case, the communication link **126** may couple the LEC **108** directly to the LEC **118**. The use of the system **100** with other telephone configurations are illustrated in other figures.

To place a telephone call, the caller activates the originating telephone **102** to dial in the telephone number corresponding to the destination telephone number **104**, thereby establishing the communication link **110** with the central office switch **106**. In turn, the central office switch **106** establishes the communication link **126** (via the LDC **124**, if necessary), thus establishing a communication link with the central office switch **116**. In a conventional telephone system, the central office switch **116** establishes the communication link **120** to the destination telephone **104** causing the destination telephone to ring. If the callee picks up the destination telephone, a complete communication link between the originating telephone **102** and the destination telephone **104** has been established. This is sometimes referred to as "terminating" the telephone call. The specific telecommunications protocol used to establish a telephone communication link between the originating telephone **102** and the destination telephone **104** is well known in the art and need not be described herein. The preceding description of techniques used to establish the telephone communication link are provided only as a basis for describing the additional activities performed by the system **100**.

With the system **100**, the central office switch **116** does not initially establish the telephone communication link **120** with the destination telephone **104** to cause the telephone to ring. Instead, the central office switch **116** establishes a communication link **132** with a computer network **134**, such as the Internet. As those skilled in the art can appreciate, the Internet is a vast multi-computer network coupled together by data links having various communication speeds. Although the Internet **134** may use a variety of different communication protocols, a well-known communication protocol used by the Internet is a Transmission Control Protocol/Internet Protocol (TCP/IP). The transmission of data on the Internet **134** using the TCP/IP is known to those skilled in the art and need not be described in greater detail herein.

The central office switch **116** utilizes conventional telephone communication protocols, which may be different from the TCP/IP communication protocols used by the Internet **134**. The system **100** includes a communication interface **136** to translate data between the two communication protocols. The communication interface **136** includes a telephone interface portion **138** and an Internet interface portion **140**. The telephone interface portion **138** is coupled to the central office switch **116** via the communication link **132** such that communications occurring on the communication link **132** utilize the telephone communication protocol. The Internet interface portion **140** communicates via the Internet using conventional communication protocols, such as TCP/IP.

The communication interface **136** may be implemented on a computing platform that functions as a server. The conventional components of the computing platform, such as a CPU, memory, and the like are known to those skilled in the art and need not be described in greater detail herein. The telephone interface portion **138** may comprise an Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI) to communicate with the central office switch **116**. The ISDN PRI, which may be implemented on a plug-in computer card, provides information to the telephone interface portion **138**, such as automatic number identification (ANI), dialed number identification service (DNIS), and the like. As is known, ANI provides the telephone number of the caller's telephone (e.g., the originating telephone **102**) while the DNIS allows the number the caller dialed (e.g., the destination telephone **104**) to be forwarded to a computer system. These data may be considered "keys" which may be used by the system **100** to identify the caller and the callee. Thus, the central office switch **116** provides information which may be used to access the affiliation list **150** for the destination telephone **104**.

The Internet interface portion **140** may be conveniently implemented with a computer network card mounted in the same computing platform that includes the ISDN PRI card. However, it is not necessary for satisfactory operation of the system **100** that the interface cards be co-located in the same computing platform. It is only required that the telephone interface portion **138** communicate with the Internet interface portion **140**. The Internet interface portion **140** receives the incoming data (e.g., the ANI, DNIS, and the like) and generates Internet compatible commands. The specific form of the Internet commands using, by way of example, TCP/IP, are within the scope of knowledge of one skilled in the art and need not be described herein. As will be described below, data provided by the central office switch **116** will be used to access data on the Internet and use that data to determine the manner in which a telephone call will be processed.

The Internet **134** stores an affiliation list **150**, which may be established by the user of the destination telephone **104**. Data stored within the affiliation list **150** is accessed by the central office switch **116** to determine the manner in which the call from the originating telephone **102** will be processed. Details of the affiliation list **150** are provided below. The Internet **134** also includes an Internet controller **152** which communicates with a callee computer **154** via a network link **156**. The communication between the callee computer **154** and the Internet **134** is a conventional communication link used by millions of computers throughout the world. For example, the callee computer **154** may be a personal computer (PC) containing a communication interface, such as a modem (not shown). The network link **156** may be a simple telephone communication link using the modem to communicate with the Internet **134**. The Internet controller **152** functions in a conventional manner to communicate with the callee computer **154** via the network link **156**. Although the communication link **132** and the network link **156** are both communication links to the Internet, the network link **156** is a conventional computer connection established over a telephone line, a network connection, such as an Ethernet link, or the like. This conventional network link **156** is significantly different from the communication link **132** between the central office switch **116** and the Internet **134**. The central office switch **116** establishes the communication link **132** to access data on the Internet and uses that accessed data to determine how to process an incoming call for the destination telephone **104**. The network link **156** is a computer-to-computer connection that may simply use a telephone as the physical layer to establish the network link.

In the system **100**, the central office switch **116** receives an incoming call from the originating telephone **102** via the central office switch **106** and, optionally, the LDC **124**. Rather than immediately establishing the communication link **120** and generating a ring signal at the destination telephone **104**, the central office switch **116** establishes the

communication link **132** and communicates with the Internet **134** via the communication interface **136**. The purpose of such communication is to access the affiliation list **150** and thereby determine the manner in which the user of the destination telephone **104** wishes calls to be processed.

FIG. **3** illustrates the system **100** for a telephone system configuration in which the originating telephone **102** and the destination telephone **104** are both serviced by the same local exchange carrier **108**. The originating telephone **102** establishes the communication link **110** with the central office switch **106** in the manner described above. The central office switch **106** establishes the communication link **126** directly with the central office switch **116** without the need for the LDC **124** (see FIG. **2**). The central office switch **116** operates in the manner described above. That is, the central office switch **116** does not immediately establish the communication link **120**, but does establish the communication link **132** with the Internet **134**. For the sake of simplicity, FIG. **3** does not illustrate the communication interface **136**. However, those skilled in the art will appreciate that the central office switch **116** accesses the affiliation list **150** via the communication interface **136** (see FIG. **2**).

For the sake of simplicity, FIG. **3** also does not show the Internet controller **152** and the callee computer **154**. However, those skilled in the art can appreciate that those portions of the system may also be present in the embodiment illustrated in FIG. **3**. However, it should be noted that the callee computer **154** and the Internet controller **152** need only be used to edit the affiliation list **150**. The call processing by the central office switch **116** does not depend on the presence of the Internet controller **152** or the callee computer **154**. That is, the central office switch **116** accesses the affiliation list **150** via the communication interface **136** regardless of the presence of the callee computer **154**.

In yet another telephone system configuration, illustrated in FIG. **4**, the originating telephone **102** and the destination telephone **104** are not only serviced by the same local exchange carrier **108**, but are connected to the same central office switch **116**. However, the fundamental operation of the system **100** remains identical to that described above with respect to accessing the affiliation list **150**. That is, the originating telephone **102** establishes the communication link **110** with the central office switch **116**. However, the central office switch **106** need not establish the communication link **126** with any other central office switch since the destination telephone **104** is also connected to that same central office switch.

In this telephone system configuration, the central office switch **116** accesses the affiliation list **150** on the Internet **134** via the communication link **132** (see FIG. **2**) in the manner described above. For the sake of simplicity, FIG. **4** does not illustrate the communication interface **136**. However, those skilled in the art will recognize that the communication interface **136** operates to convert communication signals between telephone protocol used by the central office switch **106** and the Internet communication protocol used by the Internet **134**. In addition, FIG. **4** also does not illustrate the Internet controller **152** and the callee computer **154**. As noted above with respect to FIG. **3**, the Internet controller **152** and callee computer **154** are not necessary for proper operation of the system **100**. The callee computer **154** is typically used in the system **100** to edit the affiliation list **150**.

The affiliation list **150** is illustrated in greater detail in the functional block diagram of FIG. **5**. The affiliation list comprises a series of sublists, illustrated in FIG. **3** as a forward list **160**, a reverse list **162**, a block list **164**, and an allow list **166**. The forward list **160** contains a list of Internet subscribers whose Internet activity a user wishes to monitor. This list is sometimes referred to as a "buddy" list. When the user operates the callee computer **154** on the Internet **134**, the Internet controller **152** accesses the forward list **160** via an affiliation list input/output (I/O) interface **170** to determine which Internet subscribers contained within the forward list are currently active on the Internet **134**. In conventional Internet operation, the Internet controller **152** sends a message to the callee computer **154** indicating which Internet subscribers on the forward list **160** are currently active on the Internet **134**.

The forward list **160** is a list of Internet subscribers whose activity is reported to the user. Other Internet subscribers may have their own forward list (not shown) and may monitor the Internet activity of the user. When the user accesses the Internet **134** with the callee computer **154**, that activity can be monitored by others. With the system **100**, it is possible to determine who is monitoring the user's Internet activity. The reverse list **162** contains a list of Internet subscribers who have placed the user in their forward list. That is, the reverse list **162** contains a list of Internet subscribers who have placed the user in their buddy list. With the reverse list **162**, the user can determine who is monitoring his Internet activity.

The block list **164** contains a list of Internet subscribers that the user does not want to monitor his Internet activity. That is, the user's Internet activity will not be provided to any Internet subscriber contained in the block list **164**. Thus, even if a particular Internet subscriber has placed the user on their forward list, the presence of that particular Internet subscriber's name on the block list **164** will prevent the user's Internet activity from being reported to the particular Internet subscriber. The use of the block list **164** provides certain security assurances to the user that their Internet activity is not being monitored by any undesirable Internet subscribers.

The allow list **166** contains a list of Internet subscribers for whom the user may wish to communicate with but whose Internet activity the user does not wish to monitor.

The system **100** combines the capabilities of the affiliation list **150** with telephone switching technology to filter incoming calls to the destination telephone **104**. For example, the user may specify that only calls from Internet subscribers contained in the forward list **154** may contact the user via the destination telephone **104**. Alternatively, the user may specify that a calling party whose name is contained in the forward list **160** or the allow list **166** may place a call to the destination telephone **104**. As will be discussed in greater detail below, the system **100** allows the user to create general conditional processing, such as blocking calls or allowing calls. However, the user can also create specific conditional processing for individual callers or based on the user's current status or preferences.

The central office switch **116** accesses the affiliation list **150** via the communication link **132** and determines whether the calling party is in a list (e.g., the forward list **160**) that the user wishes to communicate with. If the calling party is contained within an "approved" list, the central office switch **116** establishes the communication link **120** and sends a ring signal to the destination telephone **104**. Thus, the user can pick up the telephone with the knowledge that the calling party is an individual with whom the user wishes to communicate.

Conversely, if the calling party is not contained within an approved list, such as the forward list **160** or the allow list

166, the central office switch 116 will not establish the communication link 120 with the destination telephone 104. Thus, the user will not be bothered by undesirable phone calls. In one embodiment, the central switch office simply will not establish the communication link 120 and the calling party will recognize that the call did not go through. Alternatively, the central office switch 116 may generate a signal indicating that the destination telephone 104 is busy. In this alternative embodiment, the calling party will receive a busy signal on the originating telephone 102. Thus, the user has the ability to filter incoming calls by creating a list of those individuals with whom the user wishes to communicate.

It should be noted that the affiliation list 150 may be dynamically altered by the user to add or delete individuals, change individuals from one list to another, or to change the call processing options for a particular list depending on the user's preferences. For example, the user may want to accept all calls from any source at certain times of the day. Under these circumstances, the user can edit the allow list 166 to accept calls from any calling party. Alternatively, the user may still maintain the block list 164 such that calls will not be processed from certain specified parties even if the user is willing to accept calls from any other source. Under other circumstances, the user may not wish to communicate with any individuals. In this instance, the user may indicate that all calling parties are on the block list 164. Thus, the central office switch 116 will access the Internet 134 in real-time and review data in the affiliation list 150 to thereby process incoming calls for the user in accordance with the rules present in the affiliation list.

The discussion above provides examples of the central office switch 116 processing calls from a calling party in accordance with their presence or absence of certain lists in the affiliation list 150. For example, a call from a party on the forward list 160 will be connected to the destination telephone 104 (see FIG. 2) while a call from a party on the block list 164 will not be put through to the destination telephone. However, the system 100 also allows the selection of call processing options on an individual basis rather than simply on the presence or absence in a particular list. For example, the user can edit the allow list 166 to specify that certain individuals are "allowed" while other individuals may be allowed, conditionally allowed, or blocked all together. If the individual calling party has an associated status indicating that they are allowed, the central office switch 116 will process the incoming call and connect it to the destination telephone 104. If the individual calling party has an associated blocked status, the central office switch 116 will not process the call and will not connect it to the destination telephone 104.

Furthermore, the user may attach conditional status to individual callers or to calling lists. Conditional status may be based on factors, such as the time of day, current availability of the user, work status, or the like. For example, the user may accept calls from certain work parties during specified periods of the day (e.g., 9:00 a.m.–11:00 a.m.), block calls from selected calling parties during other periods of time (e.g., 12:00–1:00 p.m.), or allow calls during a business meeting only from certain calling parties (e.g., the boss). These conditional status criteria may be applied to individuals or to one or more lists in the affiliation list 150.

FIG. 6 illustrates sample data entries in the allow list 166. The allow list 166 may include data, such as a name, Internet subscriber name, and one or more phone numbers associated with the individual data entry. It should be noted that the calling party need not have an Internet subscriber name for proper operation of the system 100. That is, the central office switch 116 accesses the allow list 166 utilizing the calling party number and need not rely on any email addresses or other Internet subscriber identification for proper operation. The allow list 166 may also include an email alias in addition to or in place of the Internet subscriber name. Some Internet subscribers prefer to "chat" with other subscribers utilizing an alias rather than their actual Internet subscriber name. The data of FIG. 6 illustrates one possible embodiment for the allow list 166. However, those skilled in the art can appreciate that the allow list 166 may typically be a part of a large database (not shown). Database operation is well known in the art, and need not be described in greater detail herein. The database or other form of the forward list 160 may be satisfactorily implemented using any known data structure for storage of data. For example, the various lists (e.g., the allow list 166, the reverse list 162, the block list 164 and the allow list 166) may all be integrated within a single database structure. The present invention is not limited by the specific structure of the affiliation list 150 nor by the form or format of data contained therein.

Rather than incoming call filtering on the basis of presence in a particular list, such as the allow list 166, as illustrated in FIG. 6, the affiliation list 150 may contain status data on an individual basis. In this event, the central office switch 116 (see FIG. 2) processes the incoming call in accordance with the designated status for that individual. In the example illustrated in FIG. 7, the affiliation list 150 contains one individual with an "allowed" status, one individual with a "blocked" status, and one individual with a "conditional" status based on user-selected criteria. In the example of FIG. 7, the user-selected criteria may be based on the particular phone from which the call is originating as well as the time of day in which the call is originated. For example, the user may wish to allow all calls from a particular number, such as an caller's work number. However, calls from another number, such as the caller's home phone, may be blocked. Other calls, such as from a caller's cellular telephone, may be allowed only at certain times of day. FIG. 7 is intended to illustrate some of the call processing options that are available to the user. As can be appreciated, a variety of different conditional status criteria may be applied to one or more potential calling parties. However, a common feature of the system 100 is that the telecommunication system, (e.g., the central office switch 116) determines calling pat status on the basis of information stored on the Internet and processes the incoming call in accordance with the user-specified criteria. Moreover, the system 100 operates in real-time to process the incoming call in accordance with the user-specified criteria.

The Internet 134 may be conveniently used as a storage area for the caller specified criteria. The advantage of such data storage on the Internet is that the data is widely accessible to the user. This provides a convenient mechanism for entering new caller data or editing existing caller data. The user can access the affiliation list 150 with the callee computer 154 via the network link 156. In contrast, the central office switch 116 may access the affiliation list 150 via the communication link 132, which may typically be a high-speed communication link. In addition, FIGS. 2, 4, and 5 illustrate the central office switch 116 as the telecommunication component that accesses the Internet 134. It is convenient for operational efficiency to have the central office switch (e.g., the central office switch 116) to which the destination telephone 104 is connected perform such Internet access. It is at this stage of the telephone call processing that the telecommunication system may most conveniently

determine the user-specified caller status. However, those skilled in the art will recognize that the status check may be performed by other portions of the telecommunication system, such as the central office switch **106**, the LDC **124**, or the like. Thus, the present invention is not limited by the particular telecommunication component that establishes the communication link with a network which the user-specified caller status data is stored.

In addition, the system **100** can be readily implemented as an "add-on" component of the telecommunication system and need not be integrated with the central office switch **116**. For example, the conventional central office switch provides the ability to divert calls based on certain call conditions, such as "Call Forward No Answer," which may be used to divert an incoming call to voicemail or "Call Forward Busy," which may also divert the incoming call to voicemail. To implement the system **100** with an add-on processor, the system may optionally include a Switch to Computer Applications Interface (SCAI) **174** and a call processor **176**. The dashed lines of FIG. **4** are intended to illustrate an alternative configuration of the system **100**. This alternative configuration can also be implemented with other telephone system configurations, such as illustrated in FIGS. **2** and **3**. The SCAI **174** is a telecommunication protocol that allows switches to communicate with external computers. Data, such as caller and callee telephone numbers, and status information, such as Call Forward Busy, are provided to the SCAM **174** by the central office switch **116**.

The call processor **176** performs the functions described above to process the call in accordance with the user-specified criteria. That is, the call processor **176** receives caller and callee data from the SCAI **174** and accesses the affiliation list **150** via the communication interface **136** (see FIG. **2**). The call processor **176** uses user-specified call processing criteria to generate instructions for the central office switch **116**. The instructions are provided to the central office switch **116** via the SCAI **174**. Those skilled in the art will appreciate that the SCAI **174** is but one example of the Open Application Interface (OAI) that can be used with the central office switch **116**.

As noted above, the system **100** can process a call intended for the destination telephone **104**, block a call, or generate a busy signal at the originating telephone **102**. However, the system **100** also operates with voicemail and permits a number of different customized outgoing messages. FIG. **4** illustrates a voicemail system **180** having a storage area containing one or more outgoing messages **182**. For example, the voicemail system **180** can play an outgoing message **182** informing the caller that "the party you are calling only accepts calls from designated callers. Please leave a message." If calls are blocked only at certain times, the outgoing message **182** can say "the party you are calling does not accept calls between 11:30 a.m. and 1:00 p.m. Please leave a message or call back after 1:00 p.m." The outgoing message can also reflect callee availability by playing a message such as "The party you are calling is in a meeting. Please leave a message or call back in X minutes" where X reflects the amount of time before the meeting is expected to end. That information can be manually provided to the affiliation list **150** by the user or automatically derived from a computerized scheduling program on, by way of example, the callee computer **154** (see FIG. **2**).

Computerized scheduling programs, such as Microsoft® D Schedule Plus, can be used on the callee computer **154** (see FIG. **2**). It is known that such scheduling programs can be accessed via a computer network or downloaded to a hand-held computing device to track appointments. The system **100** can access such computerized scheduling programs and download appointments and scheduled meetings into the affiliation list **150**. The outgoing messages **182** can be automatically selected on the basis of the user's computerized schedule. Thus, the system **100** permits the user to schedule his day (e.g., meetings, lunch time, in office/available for calls, in office/unavailable for calls, etc.) on a computerized scheduling program and to process calls in accordance with the computerized schedule and even select outgoing messages automatically based on the user's schedule.

The operation of the system **100** is illustrated in the flowchart of FIG. **7**. At a start **200**, the calling party has placed a call from the originating telephone **102** (see FIG. **2**) to the destination telephone **104**. In step **202**, the central office switch **116** has received call data from the originating telephone **102**. The received call data includes the destination telephone number of the destination telephone **104** and identification data indicating the originating telephone **102** as the source of the present call. Use of automatic number identification (ANI) is a well-known technique for providing identification data indicating the originating telephone **102** as the source of the present call. While the specific implementation of ANI data, sometimes referred to as caller ID, may not be uniformly implemented throughout the United States, the ANI data is typically delivered between the first and second rings. In the present invention, the central office switch **116** (see FIG. **2**) does not initiate a ring signal to the destination telephone **104** until after determining the status of the calling party based on the ANI. In future implementations, telecommunication companies may transmit other forms of caller identification, such as caller name, Internet address, email alias, or the like. The system **100** operates satisfactorily with any form of caller identification. The only requirement for the system **100** is that some form of caller identification be provided. The call is processed in accordance with the user-specified criteria in the affiliation list **150** for the identified caller.

In step **204**, the central office switch **116** (see FIG. **2**) establishes the communication link **132** with the Internet **134**. Although step **204** illustrates the system **100** as actively establishing the communication link **132** with the Internet **134**, those skilled in the art will recognize that the system **100** can utilize a continuous high-speed data link between the central office switch and the Internet. Thus, it is not necessary to establish a network link for each and every incoming call processed by the central office switch **116**. As previously described, the communication interface **136** translates data between the telephone protocol and the Internet protocol. In step **206**, the system **100** accesses the affiliation list **150** for the user (i.e., the called party). In an exemplary embodiment, the telephone number of the destination telephone **104** or other callee identification is used as an index or pointer to a specific location within the database where the affiliation list **150** for the particular user may be found. Database operation in general, and techniques for locating specific items within a database in particular are known to those skilled in the art and need not be described herein.

In decision **210**, the system **100** determines whether the caller identification data is on the forward list **160** (see FIG. **3**). If the caller identification data is present in the forward list, the result of the decision **210** is YES. In that event, the system **100** proceeds to FIG. **6B** where the call is processed in accordance with the rules associated with the forward list **160**.

If the caller identification data is not present in the forward list **160** (see FIG. **3**), the result of decision **210** is

NO. In that event, the system **100** moves to decision **212** to determine whether the caller identification data is in the allow list **166**. If the caller identification data is present in the allow list **166**, the result of decision **214** is YES. In that event, the system **100** proceeds to decision **216** where the call is processed in accordance with the rules associated with the allow list **166**. If the caller identification data is not present in the allow list **166**, the result of decision **216** is NO.

In decision **218**, the system **100** determines whether the caller identification data is present in the reverse list **162**. If the caller identification data is present in the reverse list **162**, the system **100** proceeds to the step **220** where the call is processed in accordance with the rules associated with the reverse list **162**. If the caller identification data is not present in the reverse list, the result of decision **218** is NO. In that event, the system moves to decision **216** to determine whether the caller is present on the block list **164**. If the caller is present on the block list **164**, the result of decision **222** is YES. In that event, the system proceeds to step **224** where the call is processed in accordance with the rules associated with the block list. If the caller identification data is not present in the block list **164**, the result of decision **222** is NO. This indicates that the caller identification data is not present in any of the user-specified lists in the affiliation list **150**. In that event, the system moves to step **226** where the call may be processed in accordance with user-specified rules of processing anonymous or unidentified calls. The flowchart of FIG. **8** illustrates the operation of the system **100** with multiple lists wherein the call processing rules are designated for each list. In this embodiment, the call is processed on the basis of the presence or absence of the caller identification data in a particular list. However, as previously discussed, the affiliation list **150** (see FIG. **5B**) may include user-specified status criteria for individual callers. In this embodiment, the system **100** processes the call on the basis of the user-specified status criteria associated with the individual caller rather than on the basis of the caller's presence or absence in a specific list. In that event, the system **100** may simply access the user affiliation list (see step **206** in FIG. **7**) and process the call in accordance with the user-specified status criteria for the individual caller. If the caller identification data is not present in the affiliation list **160**, the call may be processed using user-specified call processing criteria for unidentified callers, as shown in step **226**.

Thus, the system **100** allows the user to specify call processing rules for a plurality of different caller lists or for individual callers within a list. The caller lists may be readily edited in accordance with the changing desires of the user. The user may alter the call processing rules in accordance with various times of day, work conditions, or even the personal mood of the user. For example, the user may process all calls during certain times of the day, such as when the user is at work. However, when the user arrives home, subsequent calls may be processed in accordance with a different set of rules, such as accepting no calls during dinner time or after a certain time at night.

These rules may be applied differentially to different ones of the list in the affiliation list **150**. For example, the user may accept calls from any calling party on the forward list **160** (see FIG. **3**) or the allow list **166** during the evening hours. However, after a certain time at night, the caller may accept calls only from calling parties on the forward list **160**. Thus, the system **100** allows great flexibility in the user selection of calling rules and lists. The system **100** allows the user to filter incoming calls in accordance with generalized rules or in accordance with highly specific rules.

In addition to filtering incoming calls to the destination telephone **104**, the system **100** can monitor the status or activity of both the caller and the callee and establish a communication link between the originating telephone **102** and the destination telephone **104** when the status data indicates that both the caller and callee are available for a telephone conversation. The system **100** has been previously described with respect to callee status monitoring and processing of incoming calls in accordance with the user-selected (i.e., the callee-selected) call processing criteria. Similar status monitoring can be performed for the caller. As illustrated in FIG. **9**, the system **100** may include a caller computer **184**, which is coupled to the Internet via the communication link **132**. For the sake of clarity, FIG. **9** illustrates the callee computer **154** and the caller computer **184** as connected to the Internet **134** through a single Internet controller **152**. However, those skilled in the art will appreciate that the Internet **134**, or any computer network, includes many network controllers that function as a gateway to the network. Thus, the system **100** typically includes a large number of Internet controllers **152**.

In addition, for the sake of clarity, Figure illustrates only a single affiliation list **150**. However, those skilled in the art will appreciate that separate affiliation lists exist for the originating telephone **102** and the destination telephone **104**. The central office switch **116** (or the call processor **176**) access the appropriate affiliation list via the network connection **132** and apply the appropriate call processing rules for each telephone.

FIG. **9** also illustrates a keyboard **154***a* and mouse **154***b* coupled to the callee computer **154** for use in a conventional fashion. Similarly, the caller computer **184** includes a keyboard **184***a* and a mouse **184***b*. The computer operating system, such as the Windows® operating system, is capable of monitoring user activity on the computer. For example, the operating system on the callee computer **154** can detect user activity on the keyboard **154***a* or the mouse **154***b*. By monitoring this activity, the operating system can determine the user's status and activate certain software programs, such as a screen saver, when no user activity has been detected for a certain period of time. Under these circumstances, the operating system may determine that the callee computer **154** has entered an "idle" state. Similarly, operating system on the caller computer **184** may perform similar functions to determine user activity on the caller computer. Using the principles of the present invention, the callee computer **154** and the caller computer **184** may report the current status to the affiliation list **150** for each respective computer.

The system **100** can monitor computer activity and generate signals to both the originating telephone **102** and the destination telephone **104** when the callee computer **154** and the caller computer **184** are not in the idle state. The fact that both computers' are not in the idle state indicates that the users of each respective computer may be available for a telephone conversation. In addition, the system **100** can apply call processing rules that may also govern operation of the telephone portion of the system **100**. For example, the callee computer **154** may be in an "active" state (as opposed to the idle state) but the user has indicated that he should not be disturbed at the present time. Thus, the central office switch **116** or the call processor **176** accesses the affiliation list **150** for the destination telephone **104** to determine the callee-selected call processing criteria. In addition, the central office switch **116** or the call processor **176** can access the affiliation list **150** for the caller and apply any caller-selected call processing rules. For example, the caller computer **184**

may be in the active state, but the caller status in the affiliation list **150** may indicate that the caller is in a meeting and is, therefore, unavailable for a telephone call with the callee. In this manner, the system **100** can monitor computer activity and determine when the caller and callee may both be available for a telephone call and further applies call processing criteria for both the caller and callee. The call processing criteria for the caller and callee as well as the current status of the callee computer **154** and the caller computer **184** are stored within the respective affiliation lists **150** on the Internet **134**. This data may be accessed by the central office switch **116** or the call processor **176** via the network connection **132** in the manner previously described.

In operation, the system allows a caller to indicate a desire to establish a telephone communication link with a specified callee. The caller can use the originating telephone **102** or the caller computer **184** to initiate the call processing by the system **100**. The system **100** monitors the caller and callee activities and call processing rules and, when appropriate for both parties, establishes a telephone communication link by sending signals from the central office switch **116** to the originating telephone to generate a ring signal. The central office switch **116** also generates appropriate signals to generate ring signal at the destination telephone **104**.

As can be appreciated, the originating telephone **102** communicates with the central office switch **116** using the communication link **110** while the caller computer **184** communicates with the Internet **134** using the communication link **132**. The communication link **132** may be a second telephone line, a network connection, such as an Ethernet connection, or the like. If the user has two telephone lines, the telephone number of the telephone (e.g., the destination telephone **104**) can be different from the telephone number associated with the computer (e.g., the callee computer **154**). However, the system **100** must be aware of an association between the telephone and the computer. This is particularly important if the status of the computer (i.e., idle or active) is used as one of the call processing criteria. The system **100** can monitor the activity of a computer (e.g., the callee computer **154**) in order to establish a telephone communication link with an associated telephone (e.g., the destination telephone **104**). It is of no value to monitor a user's computer status at one location and call a completely unrelated telephone at a different location. For example, it is of no value to monitor the callee's computer at work and then to call the callee's home telephone number.

In other implementations, such as with a home computer, only a single telephone line may serve the function of both the communication link **110** and the communication link **132**. Under these circumstances, the caller may use the caller computer **184** to indicate a desire to establish the telephone communication link and then must terminate the communication link **132** so that the central office switch may generate the appropriate signals on the communication link **110** at a point in time when the callee call processing criteria and the caller call processing criteria are both met. It should be further noted that this implementation will preclude the use of the status (i.e., idle or active) of the caller computer **184** since the communication link **132** is not active.

Similarly, the destination telephone **104** and the callee computer **154** may be connected to the central office switch **116** and the Internet **134** via separate communication links (i.e., the communication link **120** and the communication link **132**, respectively). However, the system **100** may also be implemented with a single phone line. The callee may use the callee computer **154** and the communication link **132** to generate or edit the callee call processing criteria in the affiliation list **150**. However, the user must then terminate the communication link **132** to permit the central office switch **116** to establish the communication link **120**. As noted above, a single phone line precludes the use of computer status monitoring (i.e., idle or active) for the callee computer **154** since the status cannot be monitored via the communication link **132**.

The operation of the system **100** to establish a communication link with both the originating telephone **102** and the destination telephone **104** is illustrated in the flowchart of FIG. **10** where, at a start **250**, it is assumed that the caller and callee both have data in their respective affiliation lists. As previously noted, the affiliation list **150** for each individual may comprise separate sublists, such as illustrated in FIG. **5**, or a single data structure containing call processing criteria, such as allowing or blocking individual calls (see FIG. **7**) or establishing conditional criteria, such as time restrictions, current user status (e.g., in a meeting), or the current status of the user's computer (e.g., the idle or active status of the callee computer **154**). Furthermore, as previously noted, user status can be automatically provided to the affiliation list **150** by a computerized schedule program.

In step **252**, the caller indicates a desire to establish a telephone communication link with the callee. In a conventional communication system, the caller picks up the originating telephone and dials the telephone number for the destination telephone **104**. However, in accordance with this aspect of the system **100**, the caller may indicate the desire to establish a telecommunication link using the caller computer **184** and placing the callee telephone number (i.e., the telephone number of the destination telephone **104**) on a call list, such as the forward list **160** (see FIG. **5**). By placing the callee on the forward list, the system **100** can access the callee affiliation list to determine whether the callee computer **154** is active on the Internet.

With the callee telephone number (i.e., the telephone number of the destination telephone **102**) placed on the call list, the system **100** can determine the call processing criteria of both the caller and the callee, and process the request for a telephone call in accordance with those rules. In step **254**, the system **100** establishes a communication link with the Internet **134**. As previously noted, the central office switch **116** may directly establish the communication link **132** with the Internet **134** or may use the SCAI **174** and call processor **176** to communicate with the Internet. It should be noted that the telephone portion of the system may have a continuous data link with the Internet via the central office switch **116** or the call processor **176**. Thus, it is not necessary to continuously establish and tear down the communication link **132**.

In step **258**, the system **100** accesses the callee affiliation list **150**. In step **260**, the system **100** accesses the caller affiliation list **150**. As previously noted, the physical location of each affiliation list in unimportant to the satisfactory operation of the system. The only requirement is that the affiliation list is accessible via the computer network, such as the Internet **134**.

In decision **262**, the system **100** applies the callee call processing criteria and determines whether the present calling conditions meet the callee criteria. This includes testing whether the caller is contained within one of the sublists illustrated in FIG. **5** or if the status associated with the call origination data indicates that the caller is allowed or blocked, or the like. If the present calling conditions do not meet the callee criteria, the result of decision **262** is NO. In that event, the system **100** can return to step **258** to again

access the callee affiliation list. As those skilled in the art can appreciate, the callee affiliation list may be updated by the callee (typically via the callee computer **154**) which may change the result of decision **262**.

If the current call does meet the callee call processing criteria, the result of decision **262** is YES. In that event, the system **100** uses the data from the caller affiliation list **150** to determine whether the present call meets the caller call processing criteria. Although the caller indicated a desire to establish a telephone link with the callee, the caller may not be available for an immediate phone call. For example, the caller may have a meeting scheduled to begin, but expects to be available for a phone call following the meeting. The caller can manually set the call processing criteria, such as indicating the desired time of the telephone call. Alternatively, the caller call processing criteria may be automatically supplied to the caller affiliation list **150** through the use of a computerized scheduling program or the like. The system **100** may also monitor the status of the caller computer **184** to determine caller availability. For example, the caller may indicate an availability for a phone call after a predetermined time. The system **100** can detect the change in the state of the caller computer **184** from the idle state to the active state and interpret that as an indication that the caller is now available for a telephone call. The system can apply these conditions individually or in various combinations to determine the availability of the caller and callee. If the call does not meet the caller call processing criteria, the result of decision **264** is NO. In that event, the system **100** can return to step **258** to access the affiliation lists for the callee and caller, respectively, and thus continuously monitor the callee and caller call processing criteria to determine an appropriate time to make a phone call.

If the call does meet the caller call processing criteria, the result of decision **264** is YES. In that event, in step **266** the system **100** causes the central office switch **116** to send the appropriate ring signals to the originating telephone **102** and ring signals to the destination telephone **104**. In this manner, the telephone system follows the call processing guidelines of both caller and callee stored on a computer network to control the processing of the call on the telephone network.

Although the example illustrated in FIG. **10** illustrates a continuous process of checking call processing criteria against the current call conditions, those skilled in the art appreciate that other possible actions can be taken by the system **100**. For example, the caller may be on the block list **164** (see FIG. **5**). In this condition, the call will never meet the callee call processing criteria. The system **100** thus will never establish a communication link. The system **100** can send a message to the caller computer **184** indicating that the callee does not accept calls in this manner and to leave a message on the voicemail system **180**. Alternatively, the system **100** can establish a telephone communication link to the originating telephone **102** and provide a similar message. As discussed above with respect to FIG. **4**, a variety of voice mail messages can be provided to the user. The system **100** may establish a telephone communication link to the originating telephone **102** and play the appropriate outgoing message **182** (see FIG. **4**). As noted above, the system **100** can apply call processing rules derived from any source, such as the current status (e.g., idle or active) of the callee computer **154** or the caller computer **184**, the presence or absence on one of the sublists in FIG. **5** (e.g., the block list **164**), the status of one party (e.g., the allowed status of the caller), callee or caller status data provided by computerized scheduling systems, or the like. The system **100** advantageously allows multiple forms of call processing criteria to be stored in the network, such as the Internet **134**, and accessed by the telephone system, such as the central office switch **116** or the call processor **176**. Those skilled in the art will also recognize that the embodiment of the system **100** shown in FIG. **9** can be implemented with various telephone system configurations, such as those illustrated in FIGS. **2** and **3**, or any other telephone system configuration. Furthermore, the system **100** is not limited by the specific component of the telephone system that establishes the network link **132** with the affiliation list **150**. Although FIG. **9** illustrates the central office switch **116** or the call processor **176** as the component that establishes the network link, those skilled in the art will recognize that other components, such as the central office switch **106** (see FIG. **2**), the LDC **124**, or the like can establish the network link **132**. Thus, the system **100** is not limited by the specific component of the telephone communication system that establishes the network link **132**.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. For example, the system discussed herein uses, by way of example, the Internet **134** to store the affiliation list **150**. However, the system **100** can be implemented with other computer networks or as a portion of a telephone switch, such as the central office switch **116**. The telephone service provider can provide a customer with an affiliation list and some means to control the list as a value-added telephone service. The central office switch **116** accesses the internal affiliation list and processes the incoming calls in accordance with the user-specified criteria contained therein. Accordingly, the invention is not limited except as by the appended claims.

What is claimed is:

1. In a system that includes a telephone network and a computer network with one or more users, wherein each user is connected through a user computer the computer network and is logically connected through the computer network to the telephone network, a method of determining when to establish telephone communication between two parties, at least one of whom is a user connected to said computer network, comprising:

at the computer network, receiving information from the telephone network that a first party from whom a call is originating desires to establish telephone communication with a second party;

at the computer network, monitoring activity of a user computer connected to the computer network and associated with the second party;

at the computer network, storing a set of pre-determined rules for determining when the second party is available to take a call from the first party;

at the computer network, using the set of a pre-determined rules to process i) the information received from the telephone network regarding the call being originated by the first party, and ii) information regarding the monitored activity of the user computer of the second party, to determine when the second party is available to take the call originated by the first party; and

using the information processed at the computer network to facilitate connecting the call originated by the first party through the telephone network to the second party.

2. A method as recited in claim **1**, further comprising, at the computer network, monitor activity of a user computer

connected to the computer network and associated with the first party, wherein using the set of pre-determined rules is also performed using information regarding the monitored activity of the user computer of the first party.

3. A method as recited in claim 1, wherein using the information processed at the computer network to facilitate connecting the call comprises sending control signals to the telephone network to cause the telephone network to connect the call.

4. A method as recited in claim 1, wherein the predetermined rules are associated with an affiliation list of the second party and wherein the first party is referenced by the buddy list.

5. A method as recited in claim 1, wherein monitoring activity of a user computer connected to the computer network and associated with the second party comprises monitoring activity of an input device of the user computer.

6. A method as recited in claim 1, wherein the pre-defined rules specify whether the second party accepts telephone calls from the first party.

7. In a system that includes a telephone network and a computer network with one or more users, and wherein each user is connected through a user computer to the computer network and is logically connected through the computer network to the telephone network, a computer program product comprising:

a computer readable medium for carrying computer executable instructions for implementing at the computer network a method of determining when to establish telephone communication between two parties, at least one of whom is a user connected to said computer network, and wherein said method comprises:

at the computer network, receiving information from the telephone network that a first party from whom a call is originating desires to establish telephone communication with a second party;

at the computer network, monitoring activity of a user computer connected to the computer network and associated with the second party;

at the computer network, storing a set of predetermined rules for determining when the second party is available to take a call from the first party; and

at the computer network, using the set of predetermined rules to process i) the information received from the telephone network regarding the call being originated by the first party, and ii) information regarding the monitored activity of the user computer of the second party, to determine when the second party is available to take the call originated by the first party.

8. A computer program product as recited in claim 7, wherein the method further comprises using the information processed at the computer network to facilitate connecting the call originated by the first party through the telephone network to the second party.

9. A computer program product as recited in claim 7, wherein the pre-determined rules specify whether the second party accepts telephone calls from the first party.

10. A computer program product as recited in claim 7, wherein the pre-determined rules define how the telephone call is to be processed based on the time of the day of the telephone call.

11. A computer program product as recited in claim 7, wherein the method further comprises, at the computer network, monitoring activity of a user computer connected to the computer network and associated with the first party, wherein using the set of pre-determined rules is also performed using information regarding the monitored activity of the user computer of the first party.

12. In a system that includes a telephone network and a computer network with one or more users, and wherein each user is connected through a user computer to the computer network and is logically connected through the computer network to the telephone network, a method of determining when to establish telephone communication between two parties, each of whom is a user connected to said computer network, comprising:

at the computer network, monitoring activity of the user computers associated with both a first and a second party;

at the computer network, receiving information from the telephone network that the first party is originating a call to the second party;

at the computer network, storing a set of pre-determined rules for determining when the second party is available to take a call from the first party;

at the computer network, using the set of pre-determined rules to process i) the information received from the telephone network regarding the call being originated by the first party, and ii) information regarding the monitored activity of the user computers of the first and second parties, to determine when the second party is available to take the call originated by the first party; and

using the information processed at the computer network to facilitate connecting the call originated by the first party through the telephone network to the second party.

13. A method as recited in claim 12, wherein using the information processed at the computer network to facilitate connecting the call comprises sending control signals to the telephone network to cause the telephone network to connect the call.

14. A method as recited in claim 12, wherein the predetermined rules are associated with an affiliation list of the second party and wherein the first party is referenced by the buddy list.

15. A method as recited in claim 12, wherein monitoring activity of a user computer connected to the computer network and associated with the second party comprises monitoring activity of an input device of the user computer associated with the second party.

16. A method as recited in claim 12, wherein the predefined rules specify whether the second party accepts telephone calls from the first party.

17. In a system that includes a telephone network and a computer network with one or more users, and wherein each user is connected through a user computer to the computer network and is logically connected through the computer network to the telephone network, a computer program product comprising:

a computer readable medium for carrying computer executable instructions for implementing at the computer network a method of determining when to establish telephone communication between two parties, each of whom is a user connected to said computer network, wherein said method comprises:

at the computer network, monitoring activity of the user computers associated with both the first and second parties;

at the computer network, receiving information from the telephone network that the first party is originating a call to the second party;

at the computer network, storing a set of predetermined rules for determining when the second party is available to take a call from the first party; and

at the computer network, using the set of pre-determined rules to process i) the information received from the telephone network regarding the call being originated by the first party, and ii) information regarding the monitored activity of the user computers of the first and second parties, to determine when the second party is available to take the call originated by the first party.

18. A computer program product as recited in claim **17**, wherein the method further comprises using the information processed at the computer network to facilitate connecting the call originated by the first party through the telephone network to the second party.

19. A computer program product as recited in claim **17**, wherein the pre-determined rules specify whether the second party accepts telephone calls from the first party.

20. A computer program product as recited in claim **17**, wherein the pre-determined rules define how the telephone call is to be processed based on the time of the day of the telephone call.

* * * * *

EXHIBIT 2

REDACTED

EXHIBIT 3

REDACTED

EXHIBIT 4

REDACTED

EXHIBIT 5

REDACTED

EXHIBIT 6

REDACTED

EXHIBIT 7

REDACTED

EXHIBIT 8

REDACTED

REDACTED

EXHIBIT 10

UNITED STATES DISTRICT COURT
DISTRICT OF DELAWARE

MICROSOFT CORP., Plaintiff, v. ALCATEL-LUCENT ENTERPRISE and GENESYS TELECOMMUNICATIONS LABORATORIES, INC., Defendants.	Civil Action No. 07-090-SLR Hon. Sue L. Robinson

SECOND EXPERT REPORT OF WILLIAM H. BECKMANN, PH.D.

element of the telephone network) required by the '439 patent. [*Compare id.* ¶¶ 157–58 (arguing that the ACD server is the "controller" of the '439 patent, and part of the telephone network) *with* ¶ 472 (arguing that the ACD server is part of the computer network required by the '289 patent).] Mr. Hyde-Thomson does not explain this inconsistency, nor ever definitively establish whether Kelly's ACD server is part of the telephone network or the computer network. Accordingly, Mr. Hyde-Thomson has not established that Kelly discloses this limitation.

(ii) Claim 1(f): "at the computer network, monitoring activity of a user computer connected to the computer network and associated with the second party"

Kelly does not anticipate claim 1 of the '289 patent at least because Kelly does not teach "at the computer network, monitoring activity of a user computer connected to the computer network and associated with the second party." ['289 patent col.18 ll.48–50.] Mr. Hyde-Thomson claims only that Kelly discloses monitoring agent "status," but the monitored statuses are not indicators of computer activity. [Hyde-Thomson ¶ 476; *see also, e.g.*, Kelly col.19 ll.27–40 (listing possible agent statuses as "ready," "connected," "non-ACD," and "wrap-up"), col.20 l.49–col.23 l.2 (listing additional "ACD Features," none specifically involving computer activity).] In his report, Mr. Hyde-Thomson proposes that statuses such as "ready," "do not disturb," or "lunch" could satisfy the requirement of "computer activity," but these are at best indicators of *agent* activity—activity unrelated to the computer, and certainly not activity *of* the computer.

Moreover, Kelly's disclosure on this subject is limited to statuses that the agent himself communicates or selects—there is no feature for automatic "monitoring" of computer activity. [*See, e.g., id.* col.19 ll.24–40 (discussing monitoring of statuses that the "agent may transmit").] Because the agent is responsible in the Kelly system for transmitting the packets, they reflect the agent's activity—not the computer's.

(iii) Claim 1(g): "at the computer network, storing a set of pre-determined rules for determining when the second party is available to take a call from the first party."

Kelly also does not anticipate claim 1 of the '289 patent at least because Kelly does not teach "at the computer network, storing a set of pre-determined rules for determining when the second party is available to take a call from the first party." [Kelly col.18 ll.52–54.]

Mr. Hyde-Thomson fails to provide support for his conclusion that Kelly teaches a stored "set of pre-determined rules" as required by claim 1. [Hyde-Thomson 132–33.] Mr. Hyde-Thomson's report does not identify any "pre-determined rules" in Kelly that determine when a party is available for a call. Rather, Mr. Hyde-Thomson's report describes a system in which calls are queued for agents who are online—as reflected in the "Agent Information Table," "Active Agent Table," and "Split Agent Table." [*Id.*] However, Mr. Hyde-Thomson offers no showing that these tables contain any rules for determining when the agent is available.

While Microsoft has proposed to have the term "pre-determined rules" construed according to its ordinary meaning, ALE and Genesys have sought a specialized meaning for the term—"pre-set criteria." I note that Mr. Hyde-Thomson has not offered any opinion that Kelly discloses this claim element under ALE and Genesys's construction; I therefore conclude that he believes Kelly does not. [Hyde-Thomson 132.] I would concur with such a belief.

(iv) Claim 1(h): "at the computer network, using the set of a pre-determined rules to process i) the information received from the telephone network regarding the call being originated by the first party, and ii) information regarding the monitored activity of the user computer of the second party, to determine when the second party is available to take the call originated by the first party"

Kelly also does not anticipate claim 1 of the '289 patent at least because Kelly does not teach "at the computer network, using the set of a pre-determined rules to process i) the information received from the telephone network regarding the call being originated by the first

X. FURTHER COMMENTS

My current opinions are set forth in this report. As my analysis and investigation of the case continues, I may acquire additional information and/or attain further insights relating to my opinions. I specifically reserve the right to supplement this opinion in response to any additional information that becomes available to me, any matters raised by Defendants and/or opinions provided by Defendants' expert(s), or in light of any relevant orders from the Court, including the Court's claim construction order. Moreover, I may make additions, deletions, or modifications that would be reflected in my trial testimony. For trial, I expect to prepare diagrams, charts, and demonstratives to illustrate the issues presented. I also understand that I may be asked to prepare a rebuttal report and to give rebuttal testimony at trial on matters not covered in this expert report.

Date: 4/18/2008

William H. Beckmann

EXHIBIT 11

UNITED STATES DISTRICT COURT
DISTRICT OF DELAWARE

MICROSOFT CORPORATION, *Plaintiff/Counterclaim Defendant,* v. ALCATEL LUCENT ENTERPRISE and GENESYS TELECOMMUNICATIONS LABORATORIES, INC., *Defendants/Counterclaim Plaintiffs.*	)	Civil Action No. 07-90-SLR **Hon. Sue L. Robinson**

EXPERT REPORT OF MR. HENRY HYDE-THOMSON
REGARDING INVALIDITY AND MATERIALITY (CORRECTED)

3. U.S. Patent No. 5,999,965 ("Kelly")

457. It is my opinion that U.S. Patent No. 5,999,965 ("Kelly"), filed on December 7, 1999, anticipates claims 1, 3, 8, 7, and 10 of the '289 patent.

458. Based on Microsoft's construction and application of the asserted claims of the '289 patent, Kelly anticipates the asserted claims of the '289 patent. I reserve the right to amend or supplement my expert opinions based on any claim construction order or change in Microsoft's application of the asserted claims.

a. Kelly discloses a system including a telephone network, computer network, and user computer connected as required by claims 1 and 7 of the '289 patent.

459. The '289 patent claims, in relevant part:

- "In a system that includes a telephone network and a computer network with one or more users" Claim 1[a], Claim 7[a].
- "and wherein each user is connected through a user computer to the computer network and is logically connected through the computer network to the telephone network" Claim 1[b], Claim 7[b].
- "at least one of who is a user connected to said computer network" Claim 1[d], Claim 7[e].

460. The parties disagree as to the construction of "telephone network" and "computer network." ALE and Genesys propose that "telephone network" means a "network for carrying telephony information originated by telephones." Microsoft proposes that "telephone network" means a "network for carrying telephony information."

461. ALE and Genesys propose that "computer network" means a "network for carrying digital data originated by computers." Microsoft proposes that "computer network" means a "network for carrying digital data."

462. It is my opinion that the Kelly discloses these limitations under both constructions.

463. Kelly discloses an "automatic call distribution system capable of receiving incoming calls originating on either circuit-switched or packet-switched networks utilizes an automatic call distribution (ACD) server for receiving and routing incoming calls." *Abstract.* Kelly further discloses that the "agent processes, control center and ACD server may be separated geographically, but operatively coupled via a computer network." *Id.*

464. Callers can call into the ACD server disclosed by Kelly over a circuit-switched PSTN network, over a packet-switched PSTN network, or over the packet-switched Internet/Intranet network. Users in Kelly are typically agents on WebPhones (VoIP phones) on computers that are coupled to the packet-switched Internet/Intranet network, as shown in Figure 2B.

b. Kelly discloses a method of determining when to establish telephone communication between two parties as required by claims 1 and 7 of the '289 patent.

465. The '289 patent claims, in relevant part:

- "a method of determining when to establish telephone communication between two parties" Claim 1[c], Claim 7[d]

466. I understand that the parties are not disputing the construction of this claim limitation nor have they provided proposed constructions for this limitation.

467. It is my opinion that the Kelly discloses this limitation under Microsoft's apparent application of the limitation.

468. Kelly discloses a method of distributing incoming calls in an automatic call distribution system, based on agent availability and other criteria. *3:66-4:12.* Kelly discloses monitoring the status of the agent using the creation of an "agent thread" that listens for agent

status changes and updates the Agent Tables accordingly. The agent can have several different states, depending on the configuration of the particular system using the ACD server as disclosed in Kelly. For example, an agent may be "ready" (available to take a call), "connected" (already on a call), "wrap-up" (just finished a call and completing wrap-up tasks). *See* Kelly at 19:27-40. In addition, Kelly discloses using Do Not Disturb or other management-defined availability modes such as "work mode, break, lunch, personal call, send a fax, sending diskettes." *See* Kelly at 20:60-67.

c. Kelly discloses receiving information from the telephone network as required by claims 1 and 7 of the '289 patent.

469. The '289 patent claims, in relevant part:

- "at the computer network, receiving information from the telephone network that a first party from whom a call is originating desires to establish telephone communication with a second party" Claim 1[e], Claim 7[f].

470. The parties disagree as to the construction of "at the computer network, receiving information from the telephone network that a first party from whom a call is originating desires to establish telephone communication with a second party." ALE and Genesys propose that it means "receiving at the computer network an indication from the telephone network that a first party requests to set up a telephone call with a second party prior to the time the call is placed by the first party." Microsoft proposes that it be construed in accordance with its ordinary meaning. The parties also disagree as to the constructions of "computer network" and "telephone network," as noted above.

471. It is my opinion that the Kelly discloses this limitation under Microsoft's construction and apparent application of the limitation.

472. Kelly discloses telephones that may be implemented with either Internet phones making VoIP calls on a packet-switched network or conventional phones making analog calls on

a circuit-switched network. Additional types of telephones disclosed by Kelly are Internet phones making VoIP calls on a packet-switched network. The ACD server disclosed in Kelly therefore receives three types of calls: (1) the VoIP call through the PBX, (2) the conventional call through the PBX and (3) the VoIP call through the Internet/Intranet. *See Figure 2B, 6:37-10:4.* When a call is of the second type, the conventional call is "packetized" by the WebPhone Gateway Exchange (WGX) at 218 in Figure 2B. Once packetized, the call received by the ACD server as if it was a VoIP call. *See 8:59-9:19.*

d. Kelly discloses monitoring activity of a user computer as required by claims 1 and 7 of the '289 patent.

473. The '289 patent claims, in relevant part:

- "at the computer network, monitoring activity of a user computer connected to the computer network and associated with the second party" Claim 1[f], Claim 7[g].

474. The parties disagree as to the construction of "monitoring activity of a user computer." ALE and Genesys propose that it means "determining whether a called party's computer is active or idle." Microsoft proposes that it means "monitoring the status of a user computer."

475. It is my opinion that Kelly discloses this limitation under Microsoft's application and construction.

476. Kelly discloses monitoring the status of the agent using the creation of an "agent thread" that listens for agent status changes and updates the Agent Tables accordingly. The agent thread monitors for "status packets" which indicate changes in the status of the agent. The agent can have several different states, depending on the configuration of the particular system using the ACD server as disclosed in Kelly. For example, an agent may be "ready" (available to take a call), "connected" (already on a call), "wrap-up" (just finished a call and completing wrap-up tasks). *See* Kelly at 19:27-40. In addition, Kelly discloses using Do Not Disturb or other

management-defined availability modes such as "work mode, break, lunch, personal call, send a fax, sending diskettes." *See* Kelly at 20:60-67.

e. Kelly discloses storing a set of pre-determined rules for determining when the second party is available to take a call as required by claims 1 and 7 of the '289 patent.

477. The '289 patent claims, in relevant part:

- "at the computer network, storing a set of pre-determined rules for determining when the second party is available to take a call from the first party" Claim 1[g], Claim 7[h]

478. The parties disagree as to the construction of "pre-determined rules." ALE and Genesys propose that it means "pre-set criteria." Microsoft proposes that it be construed in accordance with its ordinary meaning. The parties also disagree as to the construction of "computer network," as noted above.

479. It is my opinion that the Kelly discloses this limitation under Microsoft's construction and apparent application of the limitation.

480. Kelly discloses "call routing algorithms" and using a number of different criteria to route calls. *See, e.g., 12:28-59.* Kelly discloses a method of distributing incoming communications over a packet-switched network comprising multiple steps, including determining the agent status and using predetermined criteria to "selectively associate[e] agent processes with the queue" and to "selectively assign[] incoming communications to one of the queues." *See, e.g. 3:66-4:11.*

481. Kelly discloses "a number of tables and queues necessary for routing and tracking of incoming calls, as illustrated by Figure 3B." 13:16-18, Figure 3B. The Agent Information Table stores the agent identifier as well as other information about the agent. The Active Agent Table is used to store identifying information about the agents as well as the IP address of the agents' VoIP phone. Queues (also called "splits" in Kelly) are used to keep track of incoming

calls. A "split" consists of a group of agents. The Split Agent Table contains information on agents who are actively online and identifies which group of agents a particular agent belongs to. As can be seen in Figure 3B, the tables are stored in memory as data structures. See also 14:9-15 ("As with tables 320 and 330, table 350 may be implemented as a linked list or doubly linked list, or, alternatively may be implemented in optional database 312.").

f. Kelly discloses using a set of pre-determined rules to process information as required by claims 1 and 7 of the '289 patent.

482. The '289 patent claims, in relevant part:

- "at the computer network, using the set of a pre-determined rules to process i) the information received from the telephone network regarding the call being originated by the first party, and ii) information regarding the monitored activity of the user computer of the second party, to determine when the second party is available to take the call originated by the first party" Claim 1[h], Claim 7[i]

483. The parties disagree as to the construction of "at the computer network, using the set of a pre-determined rules to process i) the information received from the telephone network regarding the call being originated by the first party, and ii) information regarding the monitored activity of the user computer of the second party, to determine when the second party is available to take the call originated by the first party "pre-determined rules."

484. ALE and Genesys propose that it means "a computer on the computer network using pre-set criteria relating to call filtering to process i) information received from the telephone network relating to the call set-up request from the calling party, and ii) information regarding whether a called party's computer is active or idle, as conditions for determining the called party is available to take a call." Microsoft did not offer a construction for this phrase.

485. However, Microsoft did offer a construction for the latter part of this phrase: "Information regarding the monitored activity of the user computer of the second party, to determine when the second party is available to take the call originated by the first party."

Concerning this portion of the phrase, Microsoft proposes that the it means "information regarding the monitored status of the user computer of the second party, to determine when the second party is available to take the call originated by the first party."

486. It is my opinion that Kelly discloses these limitations under Microsoft's construction and apparent application of the limitation.

487. Kelly discloses a system that uses a "customer thread" process in the ACD server to check the Agent Tables for agent status and other agent information to decide where to route an incoming call. Kelly further discloses a system that uses an "agent thread" process in the ACD server to "listen" for changes in agent status that are received from the agent. An agent's status will change to "READY" when the agent is online and available, to "CONNECTED" when the agent is connected with a customer call, to "WRAP-UP" when the agent has completed a call but is working on wrap-up tasks. *See, e.g., 19:27-40.*

g. Kelly discloses using the information processed at the computer network to facilitate connecting the call as required by claims 1, 3 and 8 of the '289 patent.

The '289 patent claims, in relevant part:

- "using the information processed at the computer network to facilitate connecting the call originated by the first party through the telephone network to the second party." Claim 1[i].
- "wherein using the information processed at the computer network to facilitate connecting the call comprises sending signals to the telephone network to cause the telephone network to connect the call" Claim 3
- "a computer program product as recited in claim 7 wherein the method further comprises using the information processed at the computer network to facilitate connecting the call originated by the first party through the telephone network to the second party." Claim 8.

488. The parties disagree as to the construction of "facilitate connecting the call originated by the first party through the telephone network to the second party." ALE and Genesys propose that it means "to bring about connecting the call originated by the first party

through the telephone network to the second party." Microsoft proposes that it be construed in accordance with its ordinary meaning. The parties also disagree as to the construction of "computer network" and "telephone network," as noted above.

489. It is my opinion that Kelly discloses these limitations under both parties' constructions.

490. Kelly discloses "call routing algorithms" and using a number of different criteria to route calls. *See, e.g., 12:28-59.* Kelly discloses a method of distributing incoming communications over a packet-switched network comprising multiple steps, including determining the agent status and using predetermined criteria to "selectively associate[e] agent processes with the queue" and to "selectively assign[] incoming communications to one of the queues." *See, e.g. 3:66-4:11.*

491. Certain software modules within the ACD server are responsible for call processing and call handling. These modules receive the VoIP call (which is either a VoIP call from a VoIP phone or a analog call that has been packetized by the WebPhone Gateway Exchange) and route the call. *See Figure 5.*

h. Kelly discloses "a computer program product" as required by claim 7 of the '289 patent.

492. The '289 patent claims, in relevant part:

- a computer program product comprising: a computer readable medium for carrying computer executable instructions for implementing at the computer network

493. I understand that the parties are not disputing the construction of this claim limitation (with the exception of "computer network," noted above) nor have they provided proposed constructions for this limitation.

494. It is my opinion that Kelly discloses this limitation under both parties' constructions.

495. Kelly discloses a "computer program product" with the various software modules that are installed on the ACD server which comprises both software and hardware. *See 10:60-67.* Kelly specifically discloses "a computer program product for use with a computer system" that comprises "a computer usable medium having program code embodied in the medium" and "program code for defining within the computer system memory a queue" and other "program code" for the operation of the call distribution system. *See 4:14-33.*

i. Kelly discloses pre-determined rules that define how the telephone call is to be processed based on the time of the day as required by claim 10 of the '289 patent.

496. The '289 patent claims, in relevant part:

- A computer program product as recited in claim 7, wherein the pre-determined rules define how the telephone call is to be processed based on the time of the day of the telephone call.

497. I understand that the parties are not disputing the construction of this claim limitation (with the exception of "pre-determined rules," noted above) nor have they provided proposed constructions for this limitation.

498. It is my opinion that the Kelly discloses this limitation under Microsoft's construction and apparent application of the limitation.

499. Kelly discloses a "Time of Day and Week" system for automatic load balancing. *See 12:56-59.* For example, if a call center receives a call after 5:00 pm Eastern Time, there can be an automatic routing done by the ACD server that will route the call to call centers on the West Coast in Pacific Time. *Id.* If this system is implemented as disclosed, the call would not ring at the Eastern Time call center after 5:00 pm ET, the call would instead ring at the Pacific Time call center. *Id.*

500. As set forth above and in additional detail in the claim charts attached as Exhibit J, it is my opinion that under Microsoft's proposed claim construction, the Kelly patent discloses every element of claims 1, 3, 7, 8 and 10 of the '289 patent.

4. Miloslavsky '287

a. Miloslavsky '287 discloses a system including a telephone network, computer network, and user computer connected as required by claims 1 and 7 of the '289 patent.

501. The '289 patent claims, in relevant part:

- "In a system that includes a telephone network and a computer network with one or more users" Claim 1[a], Claim 7[a].
- "and wherein each user is connected through a user computer to the computer network and is logically connected through the computer network to the telephone network" Claim 1[b], Claim 7[b].
- "at least one of who is a user connected to said computer network" Claim 1[d], Claim 7[e].

502. The parties disagree as to the construction of "telephone network" and "computer network." ALE and Genesys propose that "telephone network" means a "network for carrying telephony information originated by telephones." Microsoft proposes that "telephone network" means a "network for carrying telephony information."

503. ALE and Genesys propose that "computer network" means a "network for carrying digital data originated by computers." Microsoft proposes that "computer network" means a "network for carrying digital data."

504. It is my opinion that the Miloslavsky discloses these limitations under both parties' constructions

505. Miloslavsky discloses "[a] telephone call-routing system comprises an initial call-processing unit adapted for receiving calls from customers . . [and] are forwarded to telephony

Executed this 16th April 2008 at ~~London,~~ Bamberow England

I declare that to the best of my knowledge the foregoing is true and correct as to the facts as stated and my opinions as expressed.

By: HCIA Hyde-Thomson
Henry Hyde Thomson

EXHIBIT 12

REDACTED

EXHIBIT 13

US006041114A

United States Patent [19]

Chestnut

[11] **Patent Number: 6,041,114**

[45] **Date of Patent: Mar. 21, 2000**

[54] **TELECOMMUTE SERVER**

[75] Inventor: **Kevin L. Chestnut**, Seattle, Wash.

[73] Assignee: **Active Voice Corporation**, Seattle, Wash.

[21] Appl. No.: **08/825,206**

[22] Filed: **Mar. 27, 1997**

[51] **Int. Cl.**[7] **H04M 3/42**

[52] **U.S. Cl.** **379/211**; 379/93.02; 379/212; 379/214

[58] **Field of Search** 379/210, 211, 379/219, 220, 93.02, 93.03

[56] **References Cited**

U.S. PATENT DOCUMENTS

5,434,906	7/1995	Robinson et al.	379/88.23 X
5,568,540	10/1996	Greco et al.	379/88.23 X
5,633,916	5/1997	Goldhagen et al.	379/93.24 X
5,729,598	3/1998	Kay	379/112 X
5,764,639	6/1998	Staples et al.	379/93.02

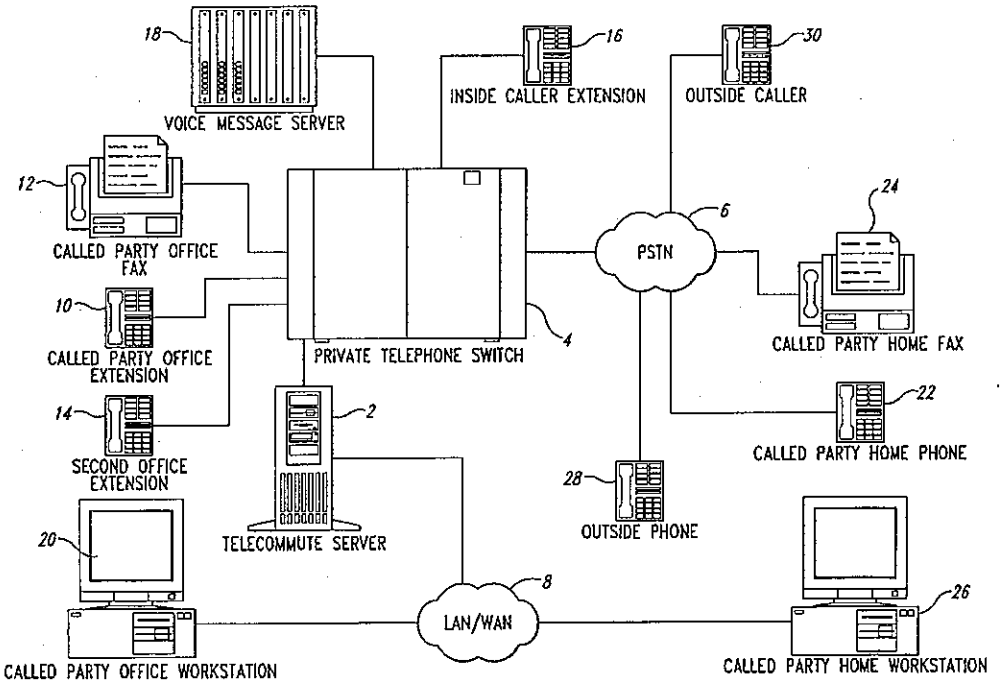
Primary Examiner—Creighton Smith

Attorney, Agent, or Firm—Graybeal Jackson Haley LLP

[57] **ABSTRACT**

A method and device for managing a telecommunication system, including call forwarding, with a computer network (LAN, WAN, etc.) integrated with a private branch exchange (PBX) connected to a Public Switched Telephone Network (PSTN). Calls are forwarded based upon the device used to log onto the computer network by the called party.

41 Claims, 5 Drawing Sheets



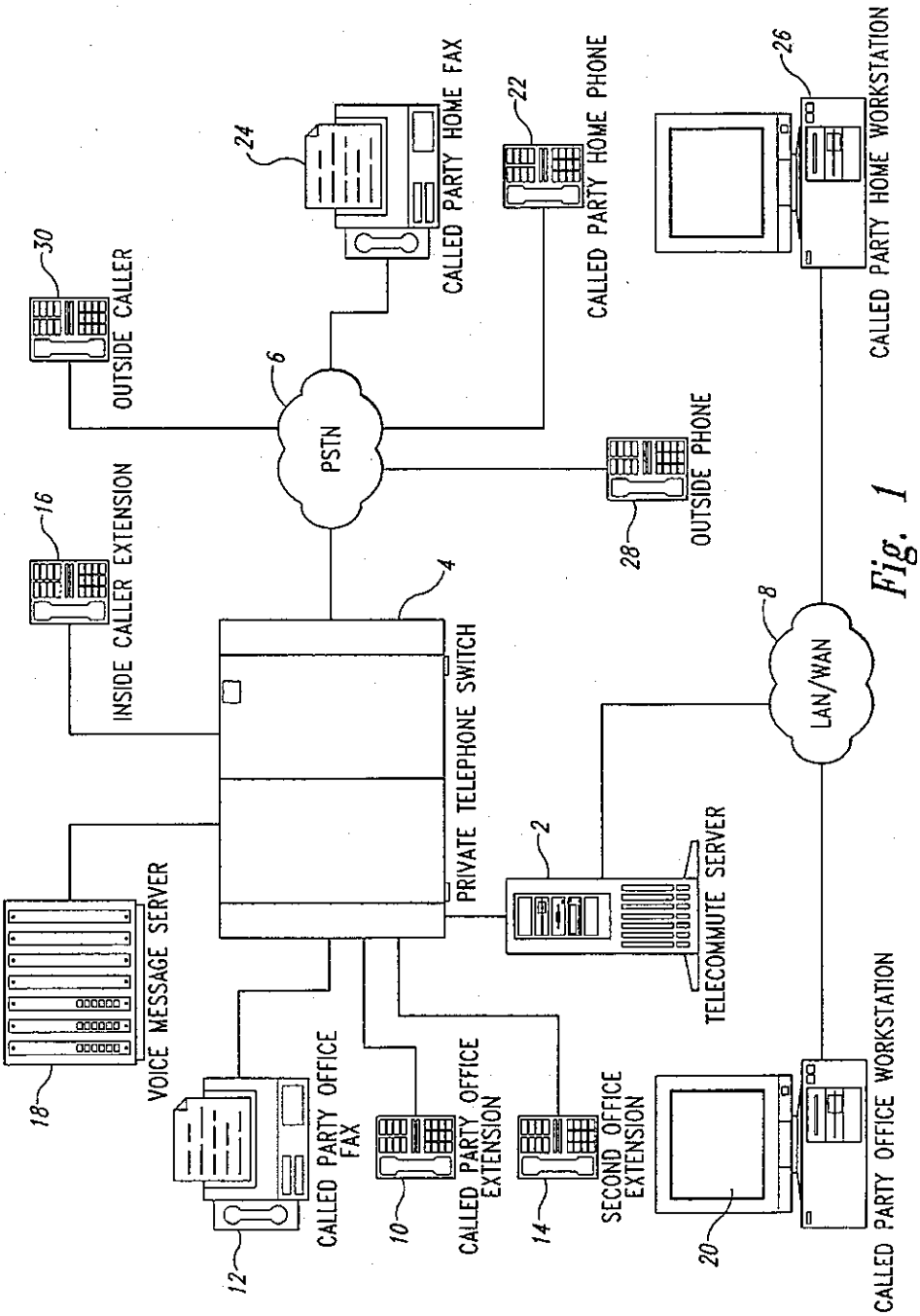

CALLED PARTY HOME FAX
24
CALLED PARTY HOME PHONE
22
26
CALLED PARTY HOME WORKSTATION
30
OUTSIDE CALLER
6
PSTN
OUTSIDE PHONE
28
16
INSIDE CALLER EXTENSION
4
PRIVATE TELEPHONE SWITCH
8
LAN/WAN
2
TELECOMMUTE SERVER
VOICE MESSAGE SERVER
18
CALLED PARTY OFFICE FAX
12
CALLED PARTY OFFICE EXTENSION
10
SECOND OFFICE EXTENSION
14
20
CALLED PARTY OFFICE WORKSTATION

Fig. 1

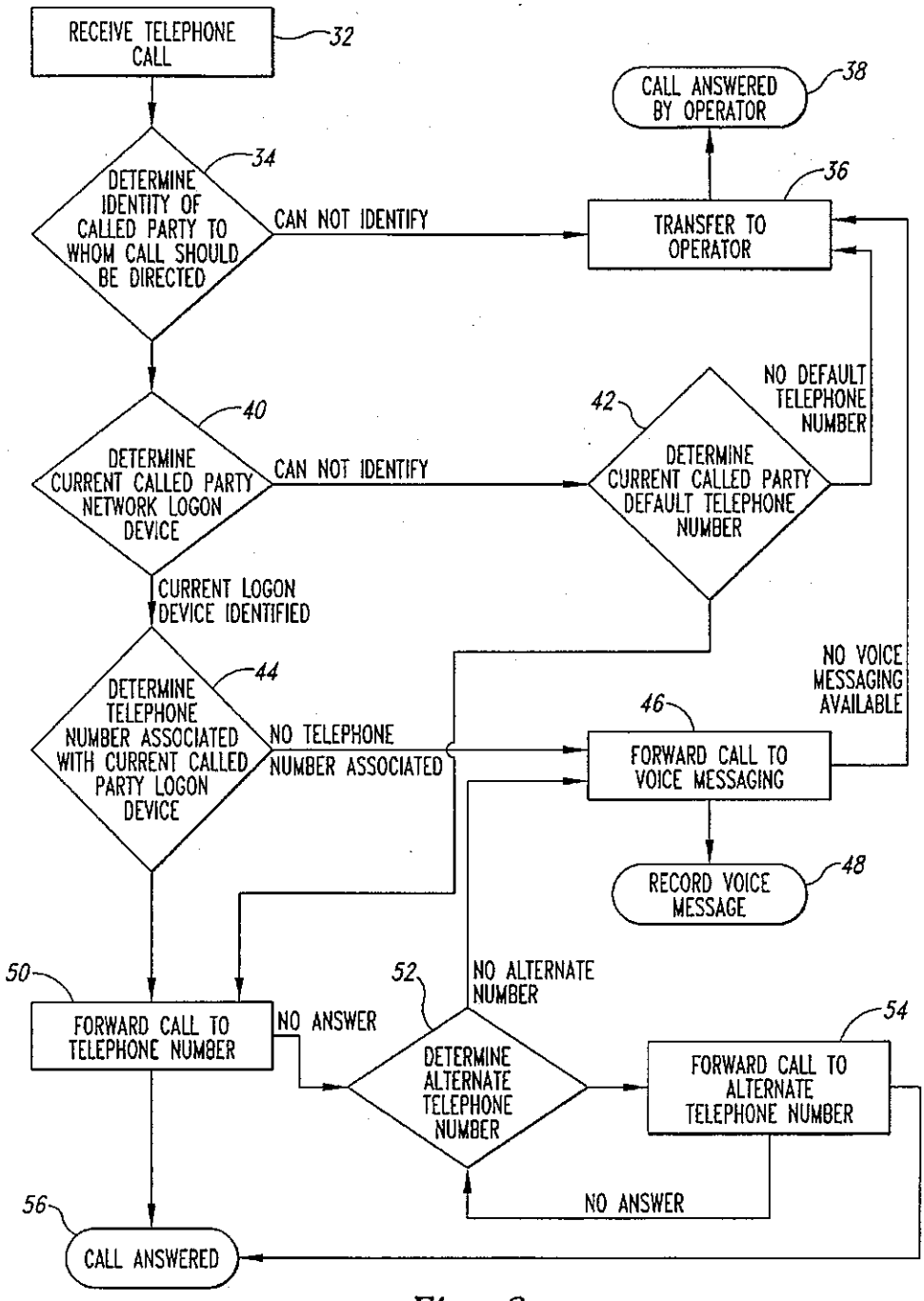

RECEIVE TELEPHONE CALL
32
DETERMINE IDENTITY OF CALLED PARTY TO WHOM CALL SHOULD BE DIRECTED
34
CAN NOT IDENTIFY
TRANSFER TO OPERATOR
36
CALL ANSWERED BY OPERATOR
38
DETERMINE CURRENT CALLED PARTY NETWORK LOGON DEVICE
40
CAN NOT IDENTIFY
DETERMINE CURRENT CALLED PARTY DEFAULT TELEPHONE NUMBER
42
NO DEFAULT TELEPHONE NUMBER
CURRENT LOGON DEVICE IDENTIFIED
DETERMINE TELEPHONE NUMBER ASSOCIATED WITH CURRENT CALLED PARTY LOGON DEVICE
44
NO TELEPHONE NUMBER ASSOCIATED
FORWARD CALL TO VOICE MESSAGING
46
NO VOICE MESSAGING AVAILABLE
RECORD VOICE MESSAGE
48
FORWARD CALL TO TELEPHONE NUMBER
50
NO ANSWER
DETERMINE ALTERNATE TELEPHONE NUMBER
52
NO ALTERNATE NUMBER
FORWARD CALL TO ALTERNATE TELEPHONE NUMBER
54
NO ANSWER
CALL ANSWERED
56

Fig. 2

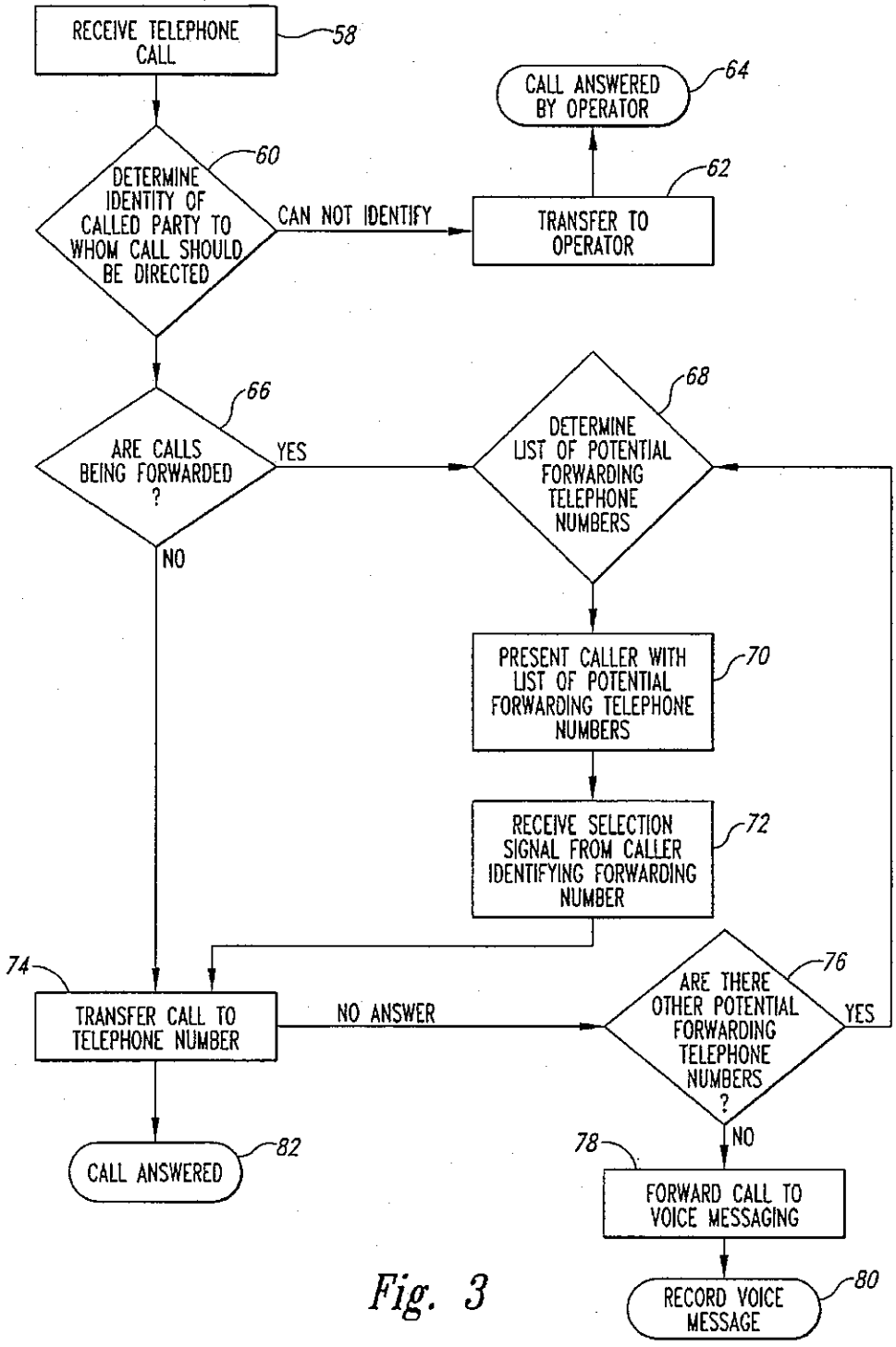

RECEIVE TELEPHONE CALL
58
DETERMINE IDENTITY OF CALLED PARTY TO WHOM CALL SHOULD BE DIRECTED
60
CAN NOT IDENTIFY
TRANSFER TO OPERATOR
62
CALL ANSWERED BY OPERATOR
64
ARE CALLS BEING FORWARDED ?
66
YES
NO
DETERMINE LIST OF POTENTIAL FORWARDING TELEPHONE NUMBERS
68
PRESENT CALLER WITH LIST OF POTENTIAL FORWARDING TELEPHONE NUMBERS
70
RECEIVE SELECTION SIGNAL FROM CALLER IDENTIFYING FORWARDING NUMBER
72
TRANSFER CALL TO TELEPHONE NUMBER
74
NO ANSWER
ARE THERE OTHER POTENTIAL FORWARDING TELEPHONE NUMBERS ?
76
YES
NO
CALL ANSWERED
82
FORWARD CALL TO VOICE MESSAGING
78
RECORD VOICE MESSAGE
80

Fig. 3

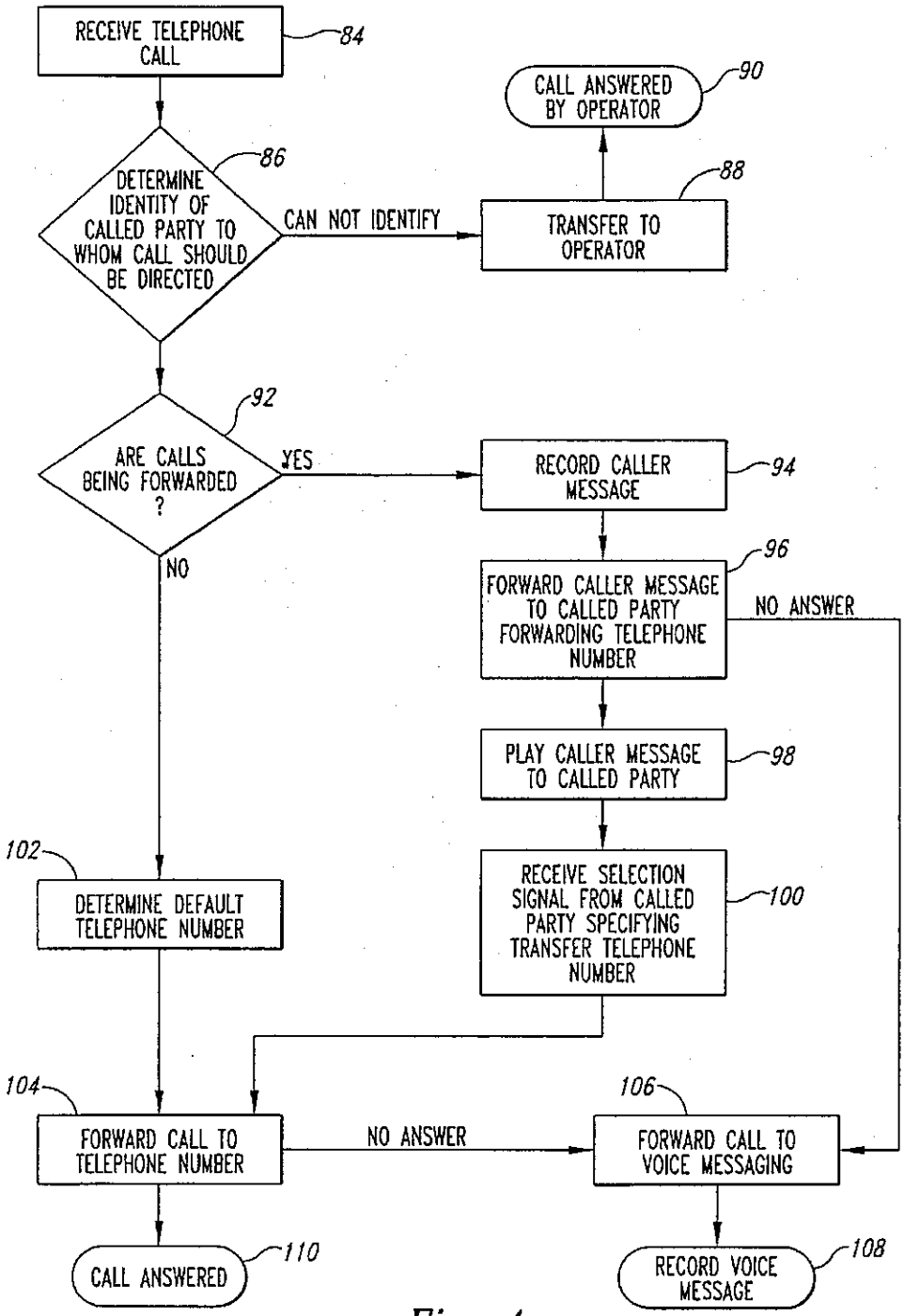

RECEIVE TELEPHONE CALL
84
DETERMINE IDENTITY OF CALLED PARTY TO WHOM CALL SHOULD BE DIRECTED
86
CAN NOT IDENTIFY
TRANSFER TO OPERATOR
88
CALL ANSWERED BY OPERATOR
90
ARE CALLS BEING FORWARDED ?
92
YES
NO
RECORD CALLER MESSAGE
94
FORWARD CALLER MESSAGE TO CALLED PARTY FORWARDING TELEPHONE NUMBER
96
NO ANSWER
PLAY CALLER MESSAGE TO CALLED PARTY
98
RECEIVE SELECTION SIGNAL FROM CALLED PARTY SPECIFYING TRANSFER TELEPHONE NUMBER
100
DETERMINE DEFAULT TELEPHONE NUMBER
102
FORWARD CALL TO TELEPHONE NUMBER
104
NO ANSWER
FORWARD CALL TO VOICE MESSAGING
106
CALL ANSWERED
110
RECORD VOICE MESSAGE
108

Fig. 4

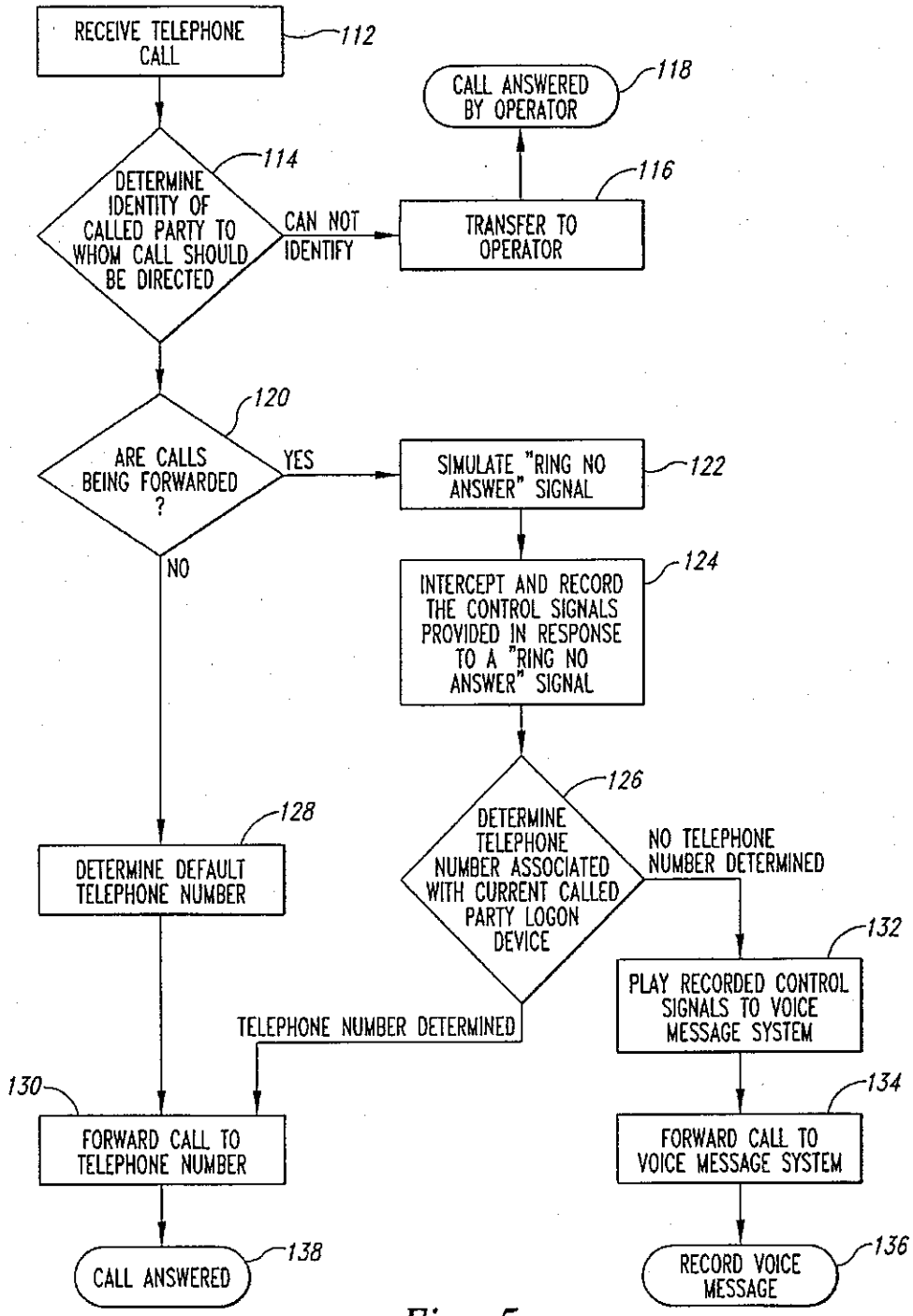

RECEIVE TELEPHONE CALL
112
DETERMINE IDENTITY OF CALLED PARTY TO WHOM CALL SHOULD BE DIRECTED
114
CAN NOT IDENTIFY
TRANSFER TO OPERATOR
116
CALL ANSWERED BY OPERATOR
118
ARE CALLS BEING FORWARDED ?
120
YES
SIMULATE "RING NO ANSWER" SIGNAL
122
NO
INTERCEPT AND RECORD THE CONTROL SIGNALS PROVIDED IN RESPONSE TO A "RING NO ANSWER" SIGNAL
124
DETERMINE TELEPHONE NUMBER ASSOCIATED WITH CURRENT CALLED PARTY LOGON DEVICE
126
NO TELEPHONE NUMBER DETERMINED
DETERMINE DEFAULT TELEPHONE NUMBER
128
TELEPHONE NUMBER DETERMINED
PLAY RECORDED CONTROL SIGNALS TO VOICE MESSAGE SYSTEM
132
FORWARD CALL TO TELEPHONE NUMBER
130
FORWARD CALL TO VOICE MESSAGE SYSTEM
134
CALL ANSWERED
138
RECORD VOICE MESSAGE
136

Fig. 5

TELECOMMUTE SERVER

FIELD OF THE INVENTION

The present invention relates generally to a system for managing a telecommunications system, and more particularly to a telecommunications management system which controls call forwarding based upon user activity on an associated computer terminal.

BACKGROUND OF THE INVENTION

Telecommuting is the substitution of telecommunications technology for the trip to and from the primary workplace. Computers, cellular phones, voice messaging, fax machines, and advanced communications links such as Integrated Services Digital Network (ISDN) and dial-up access have removed the barriers that once required workers to be in their offices. Telecommuting applies to employees working at home, employees working from a satellite office, and employees working "on the road".

The potential advantages of telecommuting are numerous and varied. Beyond the obvious advantages such as reduced rush hour traffic and enhanced air quality, there are a number of less obvious advantages such as increased employee productivity and expanded geographic range. Additionally, total office space requirements can be reduced when employees work at home, satellite offices can be established with lower overhead and are possible in areas that would have been geographically prohibitive, and emergency preparedness is improved through the decentralization of resources.

The Local-Area Network (LAN) is fast becoming the technology backbone of today's offices, since more and more computing and information resources are based on the LAN. Office workers who come to rely on easy LAN access need the same kind of access when they are working away from the office.

While electronic mail grows in popularity, the telephone and accompanying voice messaging systems are still a necessary part of the modern business environment. Computer and telephone systems are being linked through Computer Telephony Integration (CTI) applications which facilitate incoming and outgoing call handling and control.

CTI applications can be used to seamlessly interface the caller, the called party, and information on a host computer for a variety of applications. CTI applications deliver caller ID, automatic number identification (ANI), dialed number identification services (DNIS), and interactive voice response (IVR) dialed digits, such as a customer's account number, to a software application. CTI applications can also deliver request signals, such as "hold call" or "transfer call", to a telephone system.

Numerous prior art systems allow employees to access a Local Area Network via a remote dialup. Once connected they can access most of the resources of the LAN as if they were in the office. However, since the telephone they are using is not part of the office phone system they are cut off from the bulk of the CTI application functions they have available to them at the office. Some systems may allow them to listen to voice mail, however they are no longer able to use any applications which require them to have access to a telephone connected to the office telephone system. Other prior art systems allow employees to remotely access voice messaging and set call forwarding through the use of Dual Tone Multi Frequency (DTMF) tones from a touch tone phone.

In most prior art systems, the lack of integration between a company's telephone system and LAN means that an employee has to call in to the company's phone system to check their voice messaging, manually set call forwarding, and then remotely log on to the company's LAN. After call forwarding is set up, people calling the employee will have lost the ability to leave voice messaging or the employee will have to continue to call in to check their voice messaging. After logging off the LAN, the employee must remember to call into the company's telephone system to discontinue call forwarding. Furthermore, there are numerous telephone systems which do not even afford this level of connectivity, which in turn makes telecommuting a less viable alternative.

In order for a company and its employees to obtain the fullest benefit from telecommuting, communications between telecommuting employees, the primary office, and the outside world must be managed efficiently. The management of telecommunications resources extends to telephone and data communications alike. There is a need for a telecommunications management system which closely integrates a company's LAN with its telephone network and makes the same CTI application functions available to an employee whether they are in the office or working from a remote location.

The present invention closely integrates a company's LAN with its telephone network and controls call forwarding based upon user activity on an associated computer terminal. The present invention extends the functionality of the office telephone system to whatever phone the employee has available at a remote location.

SUMMARY OF THE INVENTION

The present invention, referred to as a telecommute server, is a method for controlling call forwarding using a computer connected to a data network and a telephone network. The call is forwarded based upon whether or not the called party is logged onto the data network. The forwarded call is directed to a telephone line associated with the terminal from which the called party is logged on. The called party may be associated with a particular extension and calls directed to that extension will ring through to the phone associated with the computer the called party is currently logged onto.

Call forwarding is terminated when the called party logs off or the connection is broken. The called party may instruct the system to continue call forwarding for a specified amount of time after a disconnection or they log off. Call forwarding may also be scheduled for a predefined period of time after an initial logon regardless of whether the computer is logged on or off.

Call forwarding based on computer logon may be further scheduled so that calls are forwarded to different telephone lines associated with telephones or voice messaging systems depending upon a predefined schedule. Alternatively, call forwarding may be made conditional based upon other information received by the telephone system, such as caller ID or ANI. The system can also be set up to alter the schedule if it detects that the called party is logged onto a terminal associated with a different telephone extension than the one defined in the schedule.

Logging on to the data network may cause more than one phone line to be forwarded. By way of example, logging on from a computer at home may cause voice phone calls to be forwarded to one telephone line associated with the called party's home and fax calls directed to a particular fax machine to be forwarded to another location. Also, the type

of connection used to log on may serve to identify which extension the calls should be forwarded to.

Calls may originate from outside or from within the company and may be forwarded within the company or to an outside line. This is an important feature of the invention because it makes employees just as accessible as they would be if they were at their desk in the employer's office.

Another aspect of the present invention provides a method for controlling call forwarding by providing the caller with the option of trying the called party at a second location if they are not available at a first location.

In one embodiment, the caller may be provided with a list of locations, any of which can be selected by the caller and tried in order to locate the called party. The list may be modified by the day of the week, the time of day, or whether or not the called party is currently logged on from a remote location. The list may also offer the caller the option to have the call forwarded to a third party.

Additionally, the system may also provide different callers with different levels of access to call forwarding options. Callers may be identified through "caller ID", inputting an identifying code via the telephone touchpad, or some other method of identification. Unknown or low priority callers may only be given the option of leaving a message or having the call transferred to another party while a higher priority caller may be given the option of trying to reach the called party at home.

The system may also be set up to record a message from the caller to be played to a remote called party as part of determining how best to forward the call. The call forwarding options may be automatic or may be presented to the caller or the called party in the form of a menu. The menu may be presented audibly over the phone line or it may be presented in list form on a display. The display may either be part of a communications device or a separate computer display.

The system of the present invention may also be used in conjunction with a Network Switch Server (NSS) which would give the caller the ability to respond to a call forwarding option menu from a computer terminal via a data network.

The present invention also includes a call progress manager which controls the protocols used to forward a call depending upon where the call originated and where it was forwarded to. Progress tones such as busy, trunk busy (reorder), ring no answer, answered by human, answered by machine, are managed. The present invention generates the necessary control signals to respond to the progress tones generated by the outside telephone network.

The system of the present invention can distinguish between internal extensions, outside lines, cell phones, Internet voice, and 2 way pagers. For example, on internal calls when there is "no answer", the system can be instructed to intercept for remote presence determination and ring at remote location while calls from outside the company are sent to a voice messaging system. Remote presence determination includes checking to see if the party being called is logged onto the data network or if they have scheduled to have calls forwarded at this time.

The present invention, a telecommute server, can either be integrated into a system which includes voice messaging or may be used as a stand-alone system which can be connected to a separate voice messaging system. The telecommute server intercepts incoming calls which would be forwarded to voice mail because of a "ring no answer" progress tone, records the DTMF tones which would be provided to the voice messaging system, and checks to see if there is an alternative line to which the call should be forwarded. If there is no alternative line to which the call should be forwarded, the system telecommute server passes the call onto the voice messaging system. If there is a line to which the call should be forwarded, the telecommute server forwards the call to the specified line. If there is no answer at the forwarded number, the Telecommute Server transfers the call back to the voice messaging system and plays the earlier recorded DTMF tones to the voice messaging system. The voice messaging system then answers the call as it would have without the presence of the telecommute server. The telecommute server can, through recording the DTMF tones, control any DTMF controlled device. The system can be implemented so as to work with any prior art device whether it uses in-band or outband signaling.

These and other features of the present invention will be more fully appreciated when considered in light of the following detailed description and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a functional diagram of the present invention.

FIG. 2 is a flowchart of the method of the present invention.

FIG. 3 is a flowchart of the method of the present invention.

FIG. 4 is a flowchart of the method of the present invention.

FIG. 5 is a flowchart of the method of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 shows the telecommute server 2 connected to a computer network 8 and a private telephone switch (private branch exchange (PBX)) 4 which in turn is connected to a Publicly Switched Telephone Network (PSTN) 6. A called party office extension 10, a called party office fax machine 12, a second office extension 14, an inside caller extension 16, and a voice messaging system 18 are also connected to the PBX 4. A called party office work station 20 is connected to the computer network 8. Called party home phone 22, called party home fax 24, outside phone 28, and outside caller 30 are all connected to PSTN 6. A called party home workstation 26 is connected to the computer network 8.

When an outside caller 30 places a call on the PSTN 6 the call is directed to the called party office extension 10 by the private branch exchange 4. Before the PBX sends the call to the called party office extension 10, the telecommute server 2 checks the computer network 8 to see if the called party is logged on. If the called party is logged on, the telecommute server 2 instructs the private branch exchange 4 to forward the call to the telephone extension associated with the device the called party has used to log onto the computer network 8.

If the called party was logged onto the computer network 8 from the called party office workstation 20, then the call would be directed to the called party office extension 10. If the called party were logged onto the computer network 8 from the called party home workstation 26, then the telecommute server 2 would instruct the PBX 4 to forward the call to called party home phone 22. The telecommute server 2 selects the telephone number to which incoming calls should be forwarded based upon a record stored in a memory which associates a forwarding telephone number, such as the

number for called party home phone **22**, with a network logon device, such as called party home workstation **26**.

If the connection between the network logon device, called party home workstation **26** or called party office workstation **20**, and the computer network **8** is interrupted, intentionally (via a logoff) or accidentally (via a disconnect), the telecommute server **2** can continue to forward calls for a specified period of time after a disconnect or logoff. Alternatively, the telecommute server **2** can continue to forward calls to a previously associated telephone number for a specified period of time after a disconnect but forward calls to another telephone number or a voice message system after the called party logs off. The telecommute server **2** may either have the call forwarding preferences preprogrammed into it or the forwarding preferences may be entered by the called party when he/she logs onto or off of the computer network **8**.

The telecommute server **2**, can also forward incoming calls based upon other criteria including day or date, time of day, the identity of the caller, or any preprogrammed set of rules. It is within the scope of the invention for the telecommute server **2** to utilize a set of forwarding preferences which are based the above criteria as well as other factors such as who else in the office is logged onto the computer network **8** or the telephone extensions currently in use.

If the called party is not currently logged onto the computer network **8**, the telecommute server **2** will instruct the PBX **4** to direct the call to a default telephone number. In most instances, the called party office extension **10** will be the default telephone number. If the called party office extension **10** is not answered (generating a "ring no answer" signal), the PBX **4** may forward the call to a voice messaging system **18**. Alternatively, the telecommute server **2** may instruct the PBX **4** to send the incoming call to a voice messaging system **18** if the called party is not logged onto the computer network **8**.

In another embodiment of the present invention, the telecommute server **2** will be used with a voice messaging system **18** that requires information, in the form of control signals, from the PSTN **6** or PBX **4**. When the telecommute server intercepts an incoming call to check if the called party is logged onto the computer network **8**, it also records any control signals that would normally be provided to the voice messaging system from the PBX **4** or PSTN **6**. If the telecommute server identifies that the called party is logged on, then it will forward the call to the appropriate telephone number. If the call is forwarded to a telephone number and there is no answer, then the telecommute server **2** plays the appropriate control signals to the voice messaging system **18**.

The telecommute server **2** can also be set up to present a caller with a menu listing locations to which the call can be forwarded. The caller then selects a location, most likely using the telephone touchpad, and the telecommute server forwards the call to the selected location. If there is no answer, the telecommute server **2** can either transfer the call to a voice messaging system **18** or try another location. The menu presented to the caller may be modified based upon whether or not the called party is logged onto the computer network **8**, time of day, day or date, or the caller's identity.

In another embodiment, the telecommute server **2** can ask the caller to record a message for the called party. The message is then forwarded to and played for the called party. The called party is then presented with a menu which allows him to take the call, record a message to be played for the calling party, transfer the call to a voice messaging system, or transfer the call to another telephone number. The options available to the called party may be modified based upon whether or not the called party is logged onto the computer network **8**, time of day, day or date, or the caller's identity.

FIGS. **2**–**5** illustrate the methods embodied by the present invention. Reference numerals below refers to described steps in the method, not to any noun that they happen to follow.

In FIG. **2** a telephone call is received **32** and the identity of the called party is determined **34**. If the called party can not be identified, the call is transferred to an operator **36** and the call is answered by an operator **38**.

The identity of the called party is determined **34** by looking up the dialed extension in an index stored in a computer memory and storing the identity of the associated called party stored in a memory. If the identity of the called party is determined, then the next step is to determine the current called party network logon device **40**. The current called party network logon device is determined **40** by comparing identity of the called party, which is stored in a memory, with a list of persons currently logged onto the computer network and the network identifier for the device with which they logged on to the computer network.

If no current logon device is identified, then the current called party default telephone number is determined **42** by comparing the identity of the called party, stored in a memory, with a list of default telephone numbers indexed by called party. If no default telephone number is available then the call is transferred to the operator **36** and the call is answered by an operator **38**. If a default telephone number is determined **42** then the call is forwarded to the telephone number **50** and the call is answered **56**.

If the current called party network logon device is determined then the telephone number associated with the current called party network logon device is determined **44** by comparing the identity of the logon device with a list of telephone numbers indexed by logon device stored in a memory. Other factors including time of day, day of the week, date, and/or the identity of the calling party may be used to determine the forwarding number by providing additional indexing criteria. The call is then forwarded to the identified telephone number **50**. If no telephone number is associated with the current logon device, then the call is forwarded to a voice messaging system **46** and a message is recorded **48**.

If the forwarded call is not answered, then an alternate forwarding number is determined **52** and the call is forwarded to the alternate telephone number **54**. The alternate forwarding number is determined **52** in the same fashion as the telephone number associated with the current called party network logon device is determined **44** and additional factors may apply to the determination of the telephone number to which the call should be forwarded. If there is no answer, then a second alternative forwarding number will be identified **52** and the call is forwarded **54** to the second alternative forwarding number. If there is no alternative forwarding number available, the call is forwarded to a voice messaging system **46** and a message is recorded **48**.

In FIG. **3** a telephone call is received **58** and the identity of the called party is determined **60**. If the called party can not be identified, the call is transferred to an operator **62** and the call is answered by an operator **64**.

If the called party is identified, then the system checks to see if calls are being forwarded **66**. If calls are being forwarded, then a list of potential forwarding numbers will be determined **68**. The list of potential forwarding numbers

can be based on one or more preprogrammed criteria, including the identity of the called party's current or most recent network logon device, day of the week, date, time of day, and/or the identity of the caller. The caller is then presented with a list of potential forwarding telephone numbers. These numbers may be presented as locations ("home phone, car phone, cell phone") or the caller may be offered options to "try another location or leave a message". As discussed above, different lists may be presented to different callers based on their identity or the source of origin of their call, and the lists of potential forwarding numbers may be effected by the time of day or other criteria. The caller then selects the telephone number (location) they want the call forwarded to. This selection may be made by pressing a key on the telephone keypad or speaking the selection into the receiver or, if the caller is connected via computer-telephone integration, by selecting a screen item with a mouse or pressing a key. The selection signal is received **72** and the call is transferred to the telephone number associated with the selection signal **74**.

If calls are not being forwarded **66**, then the call is transferred **74** to the originally dialed telephone number or the extension to which a PBX had transferred the call.

If there is no answer at the originally dialed telephone number, then the call will be forwarded to voice messaging **78** and a message will be recorded **80**. If there is no answer at a forwarded telephone number, then other potential forwarding numbers will be identified **76**. If there are other potential forwarding numbers, then a second list of potential forwarding numbers will be determined **68** and presented to the caller **70** and the forwarding process will be repeated. If there are no other potential forwarding telephone numbers or calls are not being forwarded, then the call will be forwarded to a voice messaging system **78** and a message recorded **80**.

In FIG. **4** a telephone call is received **84** and the identity of the called party is determined **86**. If the called party can not be identified, the call is transferred to an operator **88** and the call is answered by an operator **90**.

If the called party is identified, then the system checks to see if calls are being forwarded **92**. If calls are being forwarded, then a voice message from the caller is recorded **94**. The caller's message is then forwarded to the called party's forwarding telephone number **96**. If the telephone is answered, the caller's message is played for the called party **98**. A selection signal is received from the called party **100** and the call is transferred to the telephone number associated with the selection signal **104**. In the preferred embodiment, the called party is presented with a list of potential forwarding numbers, including transferring the call to the called party or to a voice messaging system. The list of potential forwarding numbers can be based on one or more preprogrammed criteria including the identity of the called party's current or most recent network logon device, day of the week, date, time of day, the source of origin of the call, and/or the identity of the caller.

If calls are not being forwarded **92**, then the default telephone number is determined **102** and the call is forwarded to the default number **104**. If there is no answer at the called party forwarding number **96** or the telephone number to which a call has been forwarded **104**, then the call is forwarded to a voice messaging system **106** and a message is recorded **108**.

In FIG. **5** a telephone call is received **112** and the identity of the called party is determined **114**. If the called party can not be identified, the call is transferred to an operator **116** and the call is answered by an operator **118**.

If the called party is identified, then the system checks to see if calls are being forwarded **120**. If calls are being forwarded, then a "ring no answer" signal is simulated and played back to the telephone network **122**. The control signals provided by the telephone network in response to the "ring no answer" signal are intercepted and recorded **124**. The signals can be in band DTMF tones, some other in band signalling system, or an out of band signalling system. If out of band tones are used the signalling line must be monitored as well as the communications line. The telephone number associated with the called party's current network logon device is determined **126**, and the call is forwarded to that telephone number **130**. Alternatively the call could be forwarded to a telephone number based upon some criteria other than the called party's current logon location.

If calls are not being forwarded **120**, then the default telephone number is determined **128** and the call is transferred to that number **130**. If there is no answer at that number, the prior art voice message system will record a message as usual.

If no forwarding telephone number is determined **126**, then the recorded control signals are played to the voice message system **132** and the call is transferred to the voice message system **134**. The voice message system responds as if there had been no interruption in the call and records a voice message **136** as if the "ring no answer" control signals had been received directly from the telephone network.

From the foregoing teachings, it can be appreciated by one skilled in the art that a new, novel, and nonobvious telecommunication management system has been disclosed. It is to be understood that numerous alternatives and equivalents will be apparent to those of ordinary skill in the art, given the teachings herein, such that the present invention is not to be limited by the foregoing description but only by the appended claims.

I claim:

1. A method for managing a telecommunications system in which call forwarding is determined by whether a computer terminal is logged into a computer network, comprising:

a) receiving a call on a telephone system which is coupled to a computer network;

b) determining with a server the identity of a called party to whom said call should be directed;

c) identifying with the server one of a plurality of network logon devices associated with said called party that is logged-on to said computer network;

d) identifying with the server a telephone number associated with said logged-on network logon device; and

e) forwarding the call to said telephone number, the forwarded call bypassing the server.

2. The method of claim **1**, wherein said call is directed to a voice messaging system if none of said plurality of network logon devices for the called party is identified as logged-on.

3. The method of claim **1**, wherein said call is directed to a telephone number associated with the previously logged-on called party network logon device if no currently logged-on network logon device is identified.

4. The method of claim **1**, wherein said call may be forwarded to any one of a plurality of telephone numbers and the determination of which telephone number said call is forwarded to is based upon the date and time said call is received.

5. The method of claim **1**, wherein said call may be forwarded to any one of a plurality of telephone numbers

and the determination of which telephone number said call is forwarded to is based upon whether said call originated from the publicly switched telephone network or an internal extension.

6. The method of claim 1, wherein said call may be forwarded to any one of a plurality of telephone numbers and the determination of which telephone number said call is forwarded to is based upon a set of predefined rules.

7. The method of claim 1, wherein said call may be forwarded to any one of a plurality of telephone numbers and the determination of which telephone number said call is forwarded to is based upon incoming signals accompanying the call which signals identify the calling party.

8. The method of claim 1 wherein the forwarding the call to said telephone number comprises forwarding the call via a publicly switched telephone network.

9. A method for managing a telecommunications system in which call forwarding is determined by whether a computer terminal is logged into a computer network, comprising:

a) receiving a call on a telephone system which is coupled to a computer network;

b) determining the identity of a called party to whom said call should be directed;

c) determining whether one of a plurality of network logon devices associated with said called party is logged onto said computer network;

d) if one of the network logon devices is logged onto said computer network, then identifying a telephone number associated with said logged-on network logon device and forwarding the call to said telephone number; and

e) if none of said plurality of network logon devices is logged onto said computer network, then directing the call to a default telephone number.

10. A method for managing a telecommunications system in which call forwarding is determined by whether a computer terminal is logged into a computer network, comprising:

a) receiving a call on a telephone system which is coupled to a computer network;

b) determining the identity of a called party to whom said call should be directed;

c) determining whether one of a plurality of network logon devices associated with said called party is logged onto said computer network;

d) if one of the network logon devices is logged onto said computer network, then identifying a telephone number associated with said logged-on network logon device and forwarding the call to said telephone number; and

e) if none of said plurality of network logon devices is logged onto said computer network, then directing said call to a telephone number associated with a previously logged-on network logon device for a specified period of time after said previously logged-on network logon device logs off said computer network.

11. A method for managing a telecommunications system in which call forwarding is controlled by a calling party, comprising:

a) receiving a call from the calling party on a telephone network requesting communications with a called party;

b) presenting said calling party with a menu listing a plurality of locations to which the call can be forwarded;

c) receiving a selection signal from said calling party identifying the location to which said call is to be forwarded; and

d) forwarding said call to a forwarding telephone number associated with said selection signal.

12. The method of claim 11, wherein said menu listing is modified based upon the identity of the calling party.

13. The method of claim 11, wherein said menu listing is modified based upon the time at which the call is received.

14. The method of claim 11, wherein said menu listing is modified based upon the day and date on which the call is received.

15. The method of claim 11, wherein said menu listing includes the option of leaving a message with a voice mail system.

16. The method of claim 11, further comprising the step of:

forwarding said call to a voice messaging system if there is no answer at the telephone number to which the call was forwarded.

17. A method for managing a telecommunications system in which call forwarding is controlled by the called party, comprising:

a) receiving an indication that calls directed to a first communications device should be forwarded to a second communications device;

b) receiving a call from a calling party on a telephone network directed to said first communications device;

c) recording a calling-party message from said calling party;

d) forwarding said calling-party message to said second communications device;

e) playing said calling-party message at said second communications device;

f) receiving a selection signal from said second communications device indicating a third communications device to which said call is to be forwarded; and

g) forwarding said call to said third communications device.

18. The method of claim 17, wherein said second communications device is selected from a plurality of communications devices based upon the time at which the call is received.

19. The method of claim 17, wherein said second communications device is selected from a plurality of communications devices based upon the day and date on which the call is received.

20. The method of claim 17, wherein said third communications device is an auto attendant system.

21. The method of claim 17, wherein said third communications device is a voice messaging system.

22. The method of claim 17, further comprising the step of:

forwarding said call to a voice messaging system if there is no response from said second communications device.

23. The method of claim 17, further comprising the step of:

presenting at said second communications device a menu listing a plurality of devices to which the call can be forwarded.

24. The method of claim 23, wherein said menu listing is modified based upon the identity of the calling party.

25. The method of claim 23, wherein said menu listing is modified based upon the time at which the call is received.

26. The method of claim 23, wherein said menu listing is modified based upon the day and date on which the call is received.

27. The method of claim 23, wherein said menu listing includes the option of forwarding the call to a voice mail system.

28. A method for managing a telecommunications system, which includes a voice messaging system, in which call forwarding is determined by whether a computer terminal is logged onto a computer network, comprising:

a) receiving a call on a telephone system which is coupled to a computer network;

b) determining the number of a called party's extension to which said call should be directed;

c) simulating a "ring no answer" of said extension number by sending a "ring no answer" signal to the telephone system;

d) intercepting control signals provided by the telephone system to the voice messaging system in response to the "ring no answer" signal;

e) recording the control signals which are provided by the telephone system to the voice messaging system in response to the "ring no answer" signal;

f) identifying which one of a plurality of network logon devices associated with said called party is logged-on to said computer network;

g) if no network logon device for the called party is identified as logged-on, playing the control signals to the voice messaging system, in order to transfer the call to said voice messaging system;

h) if a network logon device is identified as logged-on, identifying a telephone number associated with said network logon device and forwarding the call to said telephone number.

29. The method of claim 28, wherein said call is directed to a default telephone number if none of said plurality of network logon devices for the called party is identified as logged-on.

30. The method of claim 28, wherein said call is directed to a telephone number associated with the previously logged on called party network logon device if no currently logged on network logon device is identified.

31. The method of claim 28, wherein said call is directed to a telephone number associated with the previously logged on called party network logon device for a specified period of time after said network logon device logs off the network if no currently logged-on network logon device is identified.

32. The method of claim 28, wherein said call is forwarded to one of a plurality of telephone numbers based upon the date and time said call is received.

33. The method of claim 28, wherein said call is forwarded to one a plurality of telephone numbers based upon whether said call originated from the publicly switched telephone network.

34. The method of claim 28, wherein said call is forwarded to one of a plurality of telephone numbers based upon a set of predefined rules.

35. The method of claim 28, wherein said call is forwarded to one of a plurality of telephone numbers based upon the identity of the calling party.

36. A server for managing a telecommunications system that includes a computer system having a plurality of network logon devices associated with a called party and that includes a telephone system coupled to a publicly switched telephone network, the server operable to:

a) receive information from the telephone system regarding an incoming call directed to the called party;

b) identify the called party from the information;

c) identify one of the network logon devices that is logged onto the computer network;

d) identify a telephone number associated with the logged-on network logon device; and

e) control the telephone system to forward the call to the telephone number, the forwarded call bypassing the server.

37. A server for managing a telecommunications system that includes a computer system having a plurality of network logon devices associated with a called party and that includes a telephone system, the server operable to:

a) receive information from the telephone system regarding an incoming telephone call directed to the called party;

b) identify the called party from the information;

c) determine whether one of the network logon devices is logged onto the computer network;

d) if one of the network logon devices is logged onto the computer network, then identify a telephone number associated with the logged-on network logon device and control the telephone system to forward the call to the telephone number; and

e) if none of the network logon devices are logged onto the computer network, then control the telephone system to forward the call to a default telephone number.

38. A server for managing a telecommunications system that includes a computer system having a plurality of network logon devices associated with a called party and that includes a telephone system, the server operable to:

a) receive information from the telephone system regarding an incoming telephone call directed to the called party;

b) identify the called party from the information;

c) determine whether one of the network logon devices is logged onto the computer network;

d) if one of the network logon devices is logged onto the computer network, then identify a telephone number associated with the logged-on network logon device and control the telephone system to forward the call to the telephone number; and

e) if none of the network logon devices is logged onto the computer network and if the most recently logged-on network logon device has been logged off the computer network for no longer than a predetermined time, then direct the call to a telephone number associated with the most recently logged-on network logon device.

39. A server for managing a telecommunications system that includes a telephone system, the server operable to:

a) receive information from the telephone system regarding an incoming telephone call from a calling party, the call directed to a called party;

b) present the calling party with a menu listing a plurality of locations to which the call can be forwarded;

c) receive from the calling party a selection signal identifying the location to which the call is to be forwarded; and

d) control the telephone system to forward the call to a telephone number associated with the identified location.

40. A server for managing a telecommunications system that includes a telephone system, the server operable to:

a) receive an indication that the telephone system is to forward calls directed to a first communications device to a second communications device;

b) receive information from the telephone system regarding an incoming telephone call from a calling party, the call directed to the first communications device;

c) record a calling-party message from the calling party;

d) control the telephone system to forward the calling-party message to the second communications device;

e) play the calling-party message at the second communications device;

f) receive a selection signal from the second communications device indicating that the call is to be forwarded to a third communications device; and

g) control the telephone system to forward the call to the third communications device.

41. A server for managing a telecommunications system that includes a computer system having a plurality of network logon devices associated with a called party, a telephone system, and a voice messaging system coupled to the telephone system, the server operable to:

a) receive information from the telephone system regarding an incoming telephone call directed to the called party;

b) determine the called party's telephone number to which the call is to be directed;

c) simulate a "ring no answer" of the telephone number by sending a "ring no answer" signal to the telephone system;

d) intercept control signals provided by the telephone system to the voice messaging system in response to the "ring no answer" signal;

e) record the intercepted control signals;

f) determine whether one of the network logon devices is logged onto the computer network;

g) if no network logon device is logged-on, then transfer the call to the voice messaging system by playing the recorded control signals to the voice messaging system; and

h) if a network logon device is logged-on, then identify a forwarding telephone number associated with the network logon device and control the telephone system to forward the call to the forwarding telephone number.

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